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ORIGINAL RESEARCH PAPER

DOES VOCATIONAL TRAINING CHANGE THE VALUES OF PRISON INMATES? A LONGITUDINAL STUDY OF VOCATIONAL VALUES AND WORK ETHIC

Elke Brewster

***School of Education JKU Linz**, Linz, Austria*

Correspondence concerning this article should be addressed to Elke Brewster, School of Education JKU Linz, Linz, Austria. E-mail: brewster@gmail.com

ABSTRACT

This study examines change in work-related values among incarcerated apprentices in the Austrian prison system. Despite the central role of vocational education for resocialization, systematic longitudinal evidence is lacking. A three-level theoretical framework integrates macro-sociological value stability, institutional context factors including training climate, Turning Point theory, and the Good Lives Model, and individual action cycles. In a prospective panel design, N = 39 male inmates across six Austrian facilities were surveyed at two waves over 24 months (2023 to 2025). No significant changes in vocational values or work ethic were found, and both hypotheses are rejected. A latent profile analysis (LPA) identified three trajectory types, with 35.9 % showing value improvements (Type 1), 46.2 % remaining stable (Type 2), and 17.9 % exhibiting deterioration (Type 3). This pattern appears consistent with the action cycle model, though causal interpretation remains tentative. By revealing three distinct trajectory types behind aggregate stability, the study contributes a trajectory-sensitive perspective to the sociology of values and offers correctional practice an evidence-based caution, namely that group-level evaluations systematically overlook the roughly one in five participants whose vocational values deteriorate during training.

Keywords: Vocational Education, Resocialization, Work Ethic, Vocational Values, Action Cycles, Interindividual Variability

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1. Introduction

Vocational values, understood as conceptions of what makes work meaningful in the prison context and which aspects of work are considered desirable, are subject to both societal and biographical processes of transformation (Brinkmann 2020). Sociological research has shown that modern societies undergo a shift from materialist to postmaterialist values and from values of duty to values of self-expression (Inglehart 1997). While this change has been studied intensively in ordinary work and life contexts, the prison setting as a life context has remained almost entirely unexamined.

As total institutions (Goffman 1961), prisons represent a theoretically and empirically relevant limiting case. They are characterized by structural deprivation, heteronomy, and restricted scope for action, all of which run counter to societal trends of modernization. The question of whether and how vocational training in the prison system might change value orientations is therefore important not only criminologically but also from the perspective of the sociology of values.

In the Austrian prison system, vocational training occupies a central position within the mandate of resocialization. The Prison Act (StVG 1969) requires the promotion of occupational qualification, and several correctional facilities offer recognized apprenticeship occupations. Nonetheless, systematic empirical longitudinal studies that analyze the influence of this training on vocational value orientations and work ethic are lacking.

The present contribution attempts to close this research gap by means of a prospective panel study (N = 39; 24 months; 2023 to 2025) in six Austrian correctional facilities. The study is designed as a hypothesis-based investigation with strongly exploratory elements, because although it tests two a priori hypotheses, the small sample and the pilot-study character mean that it deliberately follows a descriptive and exploratory direction that emphasizes effect estimation and trajectory analysis. The hypotheses are presented at the end of the theoretical section as the outcome of the theoretical derivation.

The study thereby makes a twofold contribution. First, it closes an empirical gap, since systematic longitudinal data on vocational value change among incarcerated apprentices are so far lacking in the German-speaking region, whereas the international research on vocational education in prison predominantly focuses on recidivism and employment outcomes and largely leaves value orientations aside (cf. van Tiem et al. 2026). Second, with its trajectory-based analysis it provides a methodological instrument that makes visible the interindividual heterogeneity hidden behind aggregate means and thus goes beyond the mean-value logic that is customary in this field.

2. Empirical Findings and Research Gap

2.1. Vocational Value Change in Modern Societies

Empirical research on vocational value change shows a robust trend from materialist to postmaterialist values in Western industrialized nations (Inglehart 1997). Twenge et al. (2010) document a significant shift in vocational value priorities between the 1970s and the 2000s, with intrinsic vocational values such as autonomy, the experience of competence, and social embeddedness gaining importance relative to extrinsic ones such as salary and prestige. Jin and Rounds (2012), in a meta-analysis of longitudinal studies, show that vocational values are relatively stable across the lifespan but can respond to critical life events.

This research is based almost exclusively on representative population samples under stable societal conditions. For marginalized groups or extreme contexts such as the prison system, findings are scarce, which marks the central research gap of this study.

2.2. State of Research on the Prison System

The few available studies on values in the prison system concentrate on cross-sectional surveys of detention conditions (Azemi 2020) or on the application of value-theoretical approaches to inmates (Wegel et al. 2018). Systematic longitudinal studies on vocational value change among incarcerated apprentices do not exist in the German-speaking region. The RAND meta-analysis (Davis et al. 2013) and the analysis by Sprick Schuster and Stickle (2023) do demonstrate positive effects of vocational training programmes on recidivism rates, but not on value orientations.

The prison system is thus a blind spot of the sociology of values, in which the sociological question of value change under extreme conditions meets an empirically almost unexplored field. To the best of current knowledge, the present study is the first prospective panel study on vocational value change in German-speaking correctional facilities.

3. Theoretical Framework. Value Change in Total Institutions

The theoretical model is tailored to the specific context of the prison system and combines three explanatory levels. Figure 1 at the end of this section visualizes the relationships.

The three-part structure follows the consideration that vocational value change in prison can be explained only through the interplay of several levels of analysis. The macro level describes the socially shaped baseline values with which inmates enter the prison system. The meso level captures the institutional conditions of training that might enable or hinder value development. The micro level finally names the individual mechanism through which values emerge or become consolidated. Only the connection of these levels, undertaken in Section 3.4, makes it understandable why identical institutional conditions can lead to different individual trajectories.

3.1. Macro Level. Societal Value Change as Context

Inglehart's socialization hypothesis (1997) posits that individuals internalize those values whose fulfilment was uncertain during formative life phases, and that value orientations, once internalized, remain largely stable across the lifespan. This stability mechanism, however, is itself located at the individual level. It describes how a single person maintains values formed early in their biography over time. What is genuinely macro-sociological in Inglehart's theory is, by contrast, the societal value change brought about by cohort replacement, which in the present study functions not as a causal mechanism but as context, namely as a description of those value orientations with which inmates enter the prison system.

For the prison system this implies the following. If vocational value orientations are biographically sedimented before detention begins, they might remain resistant even under the radical contextual changes of incarceration. From this individual stability mechanism, and not from a macro-level effect on the individual person, the null hypothesis of the study is derived, which justifies the expected aggregate stability. Consistent with the multilevel logic according to which macro variables act primarily on other macro variables (Snijders and Bosker 2012), Inglehart's societal trend here forms not a predictor at the individual level but the value-sociological background of the investigation.

3.2. Meso Level. Institutional Conditions in the Prison System

Before these theoretical approaches are developed, the concrete institutional framework in which the studied training takes place must be outlined. Vocational education is legally anchored as a means of resocialization in the Austrian prison system (StVG 1969). Work as well as education and further training are intended to provide prisoners with qualifications for gainful employment after release (Federal Ministry of Justice 2020). Several correctional facilities offer recognized apprenticeship occupations, some in their own internal vocational schools. For younger inmates there is additionally a shortened, intensified form of apprenticeship training. This training usually concludes with an external, facility-neutral final apprenticeship examination whose certificate is usable on the labour market. A regular multi-year apprenticeship is, however, structurally possible only for correspondingly long sentences, and training capacities are limited.

Whether such programmes can, beyond imparting qualifications, also change vocational value orientations and work ethic is not presumed here but made explicit as a hypothesis to be tested. Theoretically, such an influence would be plausible through three complementary causal pathways at the meso level, which are developed in what follows.

These three approaches describe how institutional conditions in the prison system might act on individual value development. They are complementary and possibly explain different aspects of the same phenomenon.

3.2.1. Training Climate as a Context Factor

Van der Helm et al. (2014), with the Prison Group Climate Instrument (PCS), developed an instrument for capturing group climate in the prison system that can be transferred to training contexts. A positive training climate, characterized by psychological safety, personal support, growth orientation, and low repression, might create the institutional baseline conditions under which positive vocational value development and a change in work ethic become possible. Meta-analytic findings show that participation in vocational training programmes lowers recidivism rates by 14.8 to 43 % (Davis et al. 2013; Sprick Schuster and Stickle 2023). The training climate is conceptualized as a possibly necessary but not sufficient condition for value change.

3.2.2. Work as a Biographical Turning Point

The *Turning Point* theory (Sampson and Laub 1993) posits that stable employment can interrupt antisocial developmental trajectories through structuring routines, social embeddedness, and the internalization of conventional norms. For the prison system, a differentiation is needed, in that *desistance* research does document a relationship between work and the avoidance of recidivism (Stelly and Thomas 2004; Humm et al. 2022), yet not necessarily through *Turning Point* mechanisms. Vocational training is therefore conceptualized as a *possible* rather than necessary turning points whose effectiveness appears to depend on individual preconditions. Current desistance research confirms the importance of work for exit processes, yet increasingly emphasizes its biographical and contextual contingency (F.-Dufour et al. 2023).

3.2.3. Work as Access to Primary Goods

The *Good Lives Model* (Ward and Stewart 2003) is a strengths-oriented rehabilitation approach that explains offending not primarily through deficits but through the manner of need satisfaction. At its center are primary goods, that is states, activities, and experiences that are sought for their own sake, such as life and health, knowledge, competence and excellence in work and play, autonomy and self-determination, inner peace, social connectedness and belonging, meaning, and happiness. Secondary or instrumental goods are, by contrast, the concrete means and ways through which primary goods are attained. From this perspective, offending is the attempt to obtain primary goods that proceeds, however, through unsuitable or socially unacceptable means. Criminogenic needs accordingly appear as inner or outer obstacles that block prosocial access to primary goods. Recent systematic reviews classify the *Good Lives Model* as an increasingly empirically supported, although not conclusively established, rehabilitation framework (Mallion et al. 2020; Zeccola et al. 2021), which supports its use in the present context.

In this logic, vocational training can be read as a secondary good that opens legitimate access to several primary goods, such as the experience of competence and excellence in work, autonomy through usable qualification, social connectedness within the training structure, as well as meaning and prospects beyond detention. It is notable that these primary goods are reflected directly in the vocational value dimensions surveyed here. Specialization and social interests correspond to excellence in work and social connectedness, and independence corresponds to autonomy. The approach thus connects the institutional meso level with the value orientations measured at the micro level.

Above all, however, it provides the motivational basis for why action cycles in the sense of Hofer et al. (2010) might come into motion and be maintained at all. While the goal-theoretical model describes the mechanism of value formation, that is the repeated evaluation of goal-directed action, the Good Lives approach explains why inmates engage in such cycles. They do so because training promises a viable path to primary goods whose attainment was previously blocked through criminal strategies. Whether this motivational mechanism actually takes hold remains an empirical question. Theoretically, however, it makes plausible why a subset of inmates in particular might show positive value trajectories while these are absent in others.

3.3. Micro Level. Individual Action Cycles as a Mechanism of Value Formation

The goal-theoretical model of Hofer, Reinders, and Fries (2010) stands at the center of the explanation of individual value development. According to this model, values emerge not primarily through institutional exposure but through repeated action cycles in which individuals set goals, act, evaluate outcomes, and process these experiences cognitively and emotionally. Consistent experiences over longer periods might consolidate new value orientations, while failures and indignities might reinforce existing negative patterns.

3.4. Connecting the Levels and a Note on Scale Suitability

The three explanatory levels are not independent of one another. The macro level sets the baseline values through biographical socialization. The meso level might create the institutional conditions under which positive action cycles become possible. The micro level possibly determines whether and in which direction value shifts actually take place.

Regarding the appropriateness of the survey instruments in the prison context, it should be noted that items such as earnings, *work-life balance*, or mobility may seem incongruous in the prison setting. The decision in favor of the *Career Values Questionnaire* (Abessolo et al. 2019) was nonetheless taken, because it captures the vocational value structure in a differentiated

way and, through published norm values, allows comparison. The CVQ was validated on general samples of employed persons, not in the prison context. The items were adapted to the prison context for the present study. The measured values therefore reflect aspirational orientations, not behavioral intentions under current detention conditions.

3.5. Work Ethic as a Second Target Construct

In addition to vocational values, the study surveys a second, theoretically independent construct, namely work ethic. Vocational values capture which aspects of work a person evaluates as desirable. Work ethic, by contrast, describes a normative basic attitude towards work as such. It goes back to the Protestant work ethic described by Max Weber (Weber 2009), in which diligence, discipline, self-sufficiency, and the renunciation of immediate gratification are regarded as morally obligatory. Blau and Ryan (1997) translated this tradition into four measurable dimensions, namely hard work, independence, attitude towards leisure, and asceticism.

Theoretically, it is to be expected that work ethic is anchored biographically even more strongly than vocational values. It forms in early phases of socialization as a moral disposition and is less tied to concrete occupational situations. According to Inglehart's socialization hypothesis, such a deeply sedimented normative pattern should remain largely stable even under the conditions of incarceration. At the same time, it is conceivable that the structural conditions of the prison system run counter to the development of work ethic, because compulsory participation, restricted personal responsibility, and the absence of visible performance consequences impede the internalization of values of duty and achievement. From this tension it follows that work ethic is tested in the hypotheses together with vocational values, but that its change is regarded as the less likely case.

3.6. Derivation of Hypotheses

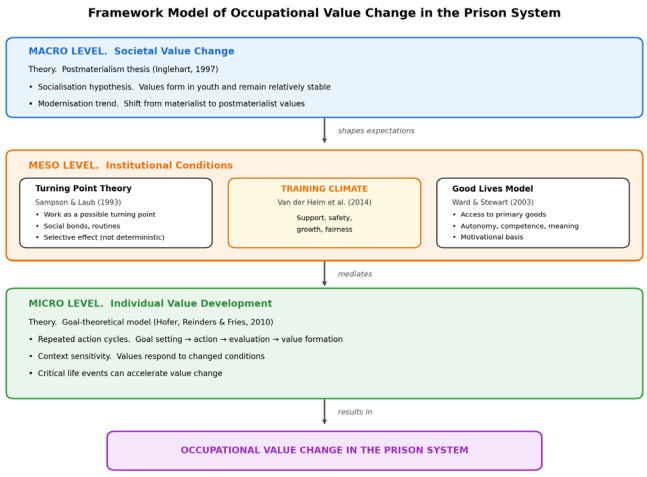
From the theoretical framework two opposing expectations can be derived. If vocational training acts as a turning point and creates access to primary goods, positive value changes might appear. If a supportive institutional climate acts as a catalyst, the training climate should correlate with positive value changes. Against the first horizon of expectation stands Inglehart's socialization hypothesis, which suggests value stability even under contextual change.

Hypothesis 1 (H1). *The vocational values and the work ethic of the prisoners in training change significantly over the course of the panel study (2023 to 2025) in the direction of prosocial values, which encompasses both an increase in work ethic and a shift towards intrinsic and social value aspects.*

Hypothesis 2 (H2). *The training climate has a positive effect on the change in vocational value attitudes and work ethic of the inmates in training.*

The testing of both hypotheses with a small sample is exploratory in character. Effect estimation is more important than significance testing.

Figure 1.
Framework model of vocational value change in the prison system. Macro, meso, and micro level.



4. Method

4.1. Study Design and Research Approach

The investigation follows a prospective panel design with two measurement points (T1, January 2023; T2, January 2025; observation period 24 months). The study is designed as a hypothesis-based pilot study with strongly exploratory elements, since given the small sample (N = 39) effect estimation and descriptive trajectory analysis are in the foreground.

The choice of a prospective panel design with two measurement points follows directly from the research question, since intra-individual change can be represented only through the repeated measurement of the same persons.

Paired t-tests are the adequate procedure for the comparison of dependent measurements. In addition, a latent profile analysis was chosen, because person-centred procedures are better suited than purely variable-centered analyses to make heterogeneous change trajectories within a sample visible (Nylund et al. 2007). Given the small sample, the findings of the profile analysis are treated throughout as exploratory.

4.2. Sample and Recruitment

The population consisted of all inmates (N = 44) who began vocational training in January 2023 in six Austrian correctional facilities, namely Graz-Karlau, Suben, Sonnberg, Vienna-Simmering, Stein, and Gerasdorf. This is a complete enumeration of this cohort, not a sample in the narrower sense. At measurement point T1, all 44 persons took part (100 %). Participation was obligatory and was declared as part of the training evaluation. At measurement point T2, 39 persons could be surveyed again (retention rate 88.6 %). The attrition of n = 5 persons resulted from early release (n = 2), transfer (n = 1), deportation under § 133a StVG (n = 1), and severe illness (n = 1). There is no indication of systematic selection effects.

The analysis sample comprises N = 39 male inmates aged 19 to 44 years (M = 29.5; SD = 7.5). The most frequent training occupations were metalworker (n = 14; 35.9 %), baker (n = 6; 15.4 %), and shoemaker (n = 4; 10.3 %). The average length of detention at T1 was 9.2 years (SD = 5.4). Training status at T2 was distributed across still in training (n = 23; 59.0 %), completed (n = 11; 28.2 %), and discontinued (n = 5; 12.8 %).

4.3. Data Collection

Three validated instruments were used and adapted to the prison context. Table 1 documents selected item wordings. Data were collected by means of standardized paper questionnaires at both measurement points. The surveys were conducted by the training supervisors in separate rooms without the presence of correctional staff, in order to minimize socially desirable response behavior. Participants were assured that their answers would have no influence on detention-related decisions. Anonymity was ensured through pseudonymized numbers from the Integrated Prison Administration (IVV). The study was approved by the Federal Ministry of Justice (BMJ, ref. 2022-0.758.000), and all ethical guidelines for research in correctional facilities were observed.

The obligatory participation at T1 was declared as part of the regular training evaluation. The possibility of socially desirable response behavior cannot be entirely ruled out despite the measures taken, since participants may have associated the survey with the training assessment. This limits internal validity.

4.3.1. Career Values Questionnaire (CVQ)

Vocational values were surveyed with the Career Values Questionnaire (CVQ) of Abessolo et al. (2019), which captures eight dimensions, namely social interests, management interests, specialization, mobility, independence, earnings, work-life balance, and variety. The response format is a 5-point Likert scale (1 = not important at all to 5 = very important) with 36 items. The instruction was reformulated to "What is generally important to you about work?" in order to capture aspirational rather than situational value orientations.

4.3.2. Work Ethic Scale (WES)

Work ethic was captured with the Work Ethic Scale (WES) of Blau and Ryan (1997), which measures four dimensions of the Protestant work ethic, namely hard work, leisure, independence, and asceticism (wasted time). The scale comprises 12 items on a 5-point Likert scale. The WES captures duty-oriented vocational values that stand in a tension-laden relationship to the postmaterialist value dimensions of the CVQ, which makes it possible to investigate shifts within the value space.

4.3.3. Prison Group Climate Instrument (PCS)

The training climate was captured with the Prison Group Climate Instrument (PCS) of Van der Helm et al. (2014), which measures four dimensions, namely support, growth, group climate, and repression (reverse-scored). The instrument comprises 40 items on a 5-point Likert scale.

4.3.4. Selected Item Wordings

Table 1.
Item wordings from the questionnaire for the instruments used

Instrument	Dimension	Item wording from the questionnaire
WES	Hard work	"If a person works hard enough, they will probably lead a good life."
WES	Leisure	"People should have more leisure time to relax."

WES	Independence	"Only those who rely on themselves get ahead in life."
WES	Asceticism (wasted time)	"You cannot take your earned money with you, so you might as well enjoy yourself." (reverse-scored)
CVQ	Social interests	"In my future work after release I would like to … help my colleagues."
CVQ	Management interests	"… be responsible for the work results of others."
CVQ	Spezialisation	"… become an expert in my field."
CVQ	Mobility	"… work internationally."
CVQ	Independence	"… work independently."
CVQ	Earnings	"… earn very well."
CVQ	Work-life balance	"… balance job and family."
CVQ	Variety	"… have a varied occupational activity."
PCS	Support	"When I have a problem, there is always someone I can turn to."
PCS	Growth	"What I learn here helps me for my occupational future."
PCS	Group climate	"The atmosphere in the group is good."
PCS	Repression	"Here you have to ask permission for everything." (reverse-scored)

Note. CVQ = Career Values Questionnaire (Abessolo et al. 2019); WES = Work Ethic Scale (Blau and Ryan 1997); PCS = Prison Group Climate Instrument (Van der Helm et al. 2014).

4.3.5. Psychometric Quality Criteria

Internal consistency was examined by means of McDonald's omega (ω), which is regarded as a robust estimator of reliability when the assumption of unidimensionality is violated (Sijtsma 2009). The CVQ shows excellent values with ω = .90/.88, and the PCS shows good values with ω = .84. The WES reaches acceptable, although not optimal, reliability with ω = .65/.62, which corresponds to the findings of the original validation (Blau and Ryan 1997). Given N = 39, all values are to be understood as indicative. Robust statements about reliability are not possible at this sample size.

4.3.6. Sociodemographic Variables

Age, nationality, religion, educational attainment, employment before detention, length of detention, training occupation, and training status at T1 were additionally recorded. These serve to describe the sample.

4.4. Statistical Analyses

Data analysis was carried out with R. To test H1, paired t-tests were calculated, with Cohen's d as the effect size. To test H2, Pearson correlations between the training climate at T1 and the change scores were calculated, with Pearson's r as the effect size. The significance level was set at $\alpha = .05$.

Since this is a complete enumeration of a defined cohort, the inferential-statistical logic is limited, because significance tests actually presuppose a random sample. The p-values are therefore to be understood as descriptive indicators. Effect sizes and descriptive statistics form the primary basis for interpretation.

An a priori power analysis (G*Power 3.1) showed that with N = 39, medium effects (d = 0.5; r = .32) would be detectable with a test power of $1 - \beta = .80$, whereas small effects below d = 0.3 are not reliably detectable. To identify individual trajectory types, a latent profile analysis (LPA) was additionally calculated with the package tidyLPA in R, which estimates latent subgroups in a model-based manner on the basis of the individual change values of CVQ and WES. Solutions with two to four profiles were compared using the Bayesian Information Criterion and entropy (Nylund et al. 2007). The final three-profile solution is fully documented in the Appendix. The raw data are subject to data-protection restrictions of the BMJ.

5. Results

5.1. Descriptive Findings. Aggregate Stability at the Group Level

Table 2 shows descriptive statistics, results of the paired t-tests, and effect sizes for both measurement points as well as for selected subdimensions.

At the aggregate level the results indicate an absence of significance with trivially small effect sizes. On this basis, H1 is rejected, since there is no indication of a systematic value change towards prosocial values, neither for vocational values nor for work ethic.

Work ethic. Work ethic (WES total score) shows no meaningful change at all with t = -0.29 (df = 38; p = .776; d = 0.05). Descriptively, all four subdimensions according to Blau and Ryan (1997) remain stable. Hard work (T1 = 1.00 ± 0.70; T2 = 0.80 ± 0.80) and independence (T1 = 1.00 ± 0.90; T2 = 0.90 ± 1.00) show minimal declines. The findings for leisure (T1 = 0.90 ± 0.80; T2 = 0.80 ± 0.90) and

Table 2.
Descriptive statistics, paired t-tests, and effect sizes for work ethic, vocational values, and training climate

Dimension	T1 M (SD)	T2 M (SD)	t (df)	p	d
Work ethic (total)	0.10 (0.46)	0.09 (0.51)	-0.29 (38)	.776	0.05
Hard work	0.21 (0.51)	0.20 (0.55)	-0.11 (38)	.913	0.02
Independence	0.18 (0.49)	0.17 (0.52)	-0.08 (38)	.936	0.01
Leisure	0.90 (0.80)	0.80 (0.90)	—	—	—
Asceticism (wasted time)	-0.60 (0.80)	-0.60 (0.80)	—	—	—
Vocational values (total)	1.12 (0.50)	1.10 (0.47)	-0.26 (38)	.796	0.04
Work-life balance	1.4 (0.6)	1.6 (0.7)	-1.89 (38)	.031*	0.30
Specialisation	1.3 (0.6)	1.4 (0.6)	-0.82 (38)	.417	0.13
Earnings	1.3 (0.7)	1.3 (0.7)	0.00 (38)	1.000	0.00
Training climate (total)	0.91 (0.53)	0.79 (0.60)	1.16 (38)	.252	0.18
Growth	1.4 (0.6)	1.1 (0.7)	2.61 (38)	.012*	0.42
Support	1.3 (0.6)	1.1 (0.7)	1.78 (38)	.083	0.28

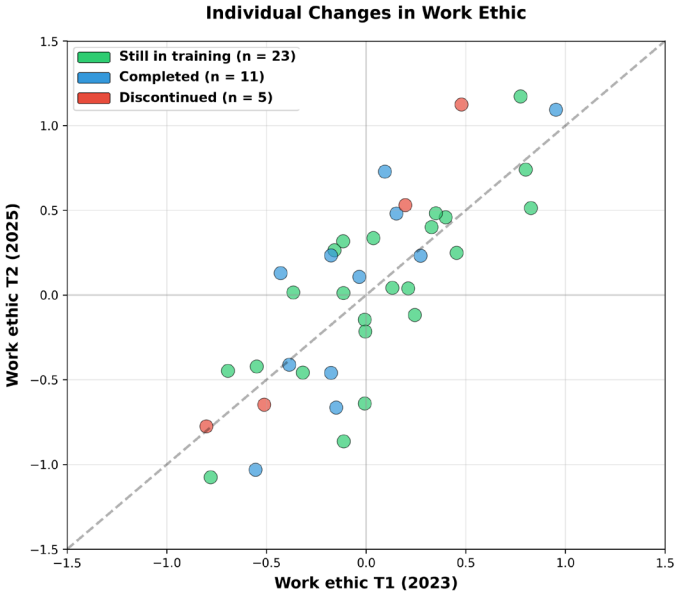
*Note. N = sample size; M = mean; SD = standard deviation; t = t-value of the paired t-test; df = degrees of freedom; p = significance value; d = Cohen's d (effect size). N = 39 for all analyses. — = no significance test available (descriptive subdimension values only). * p < .05. With a complete enumeration, p-values are to be interpreted as descriptive indicators, not as a basis for inferential-statistical decisions.*

asceticism (wasted time; T1 = -0.60 ± 0.80; T2 = -0.60 ± 0.80) are particularly interesting. While the leisure dimension declines marginally, the asceticism dimension remains absolutely stable and additionally shows the only negative mean of all WES subdimensions, which might indicate that the men already reject the wasting of time relatively strongly at the start of training. Subdimension-specific significance tests are not available, so the findings are to be interpreted in purely descriptive terms. The Protestant work ethic, that is the degree of conscientiousness, perseverance, and willingness to perform, appears to be neither strengthened nor weakened by the training experience.

Vocational values. The CVQ total score likewise shows no relevant change with t = -0.26 (df = 38; p = .796; d = 0.04). At the subdimension level, however, the work-life balance orientation stands out as the only dimension that shows a statistically conspicuous increase (d = 0.30; p = .031). All further subdimensions such as earnings, specialization, mobility, and social interests remain stable.

At the subdimension level a decline in the perceived growth orientation within the training climate also appears (d = 0.42; p = .012). The increase in the work-life balance orientation might be interpretable as a reaction to the total-institution character. The decline in the growth orientation might indicate a disillusionment after initial motivation that relativizes over 24 months. Both effects are exploratory findings that require confirmatory testing.

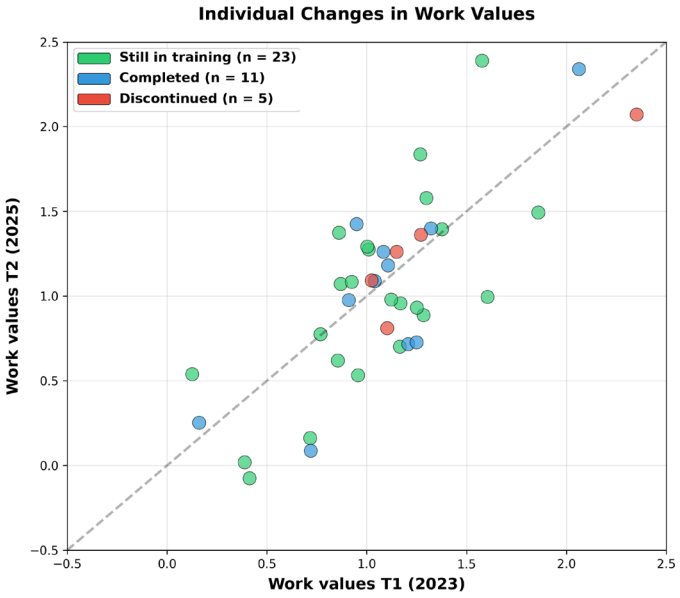
Figure 2a.
Individual changes in work ethic between T1 (2023) and T2 (2025), by training status at T2.



The individual change trajectories in Figures 2a and 2b visualize, for each participant, the value at T1 on the horizontal axis against the value at T2 on the vertical axis, with the bisecting line marking

no change. The considerable scatter around the diagonal makes visible the interindividual variability that is concealed by the aggregate stability. The pattern of findings, consisting of aggregate stability and interindividual variability, appears consistent with the goal-theoretical approach of Hofer et al. (2010), according to which individually experienced action cycles might determine the direction of value development. A causal interpretation remains exploratory, since process variables were not surveyed.

Figure 2b.
Individual changes in vocational values between T1 (2023) and T2 (2025), by training status at T2.



5.2. Correlation Analysis. Training Climate and Value Change

The findings on the correlation between training climate and value changes are summarized in Table 3.

Table 3.
Pearson correlations between training climate (T1) and value changes

Correlation	r	p	Interpretation
Training climate (T1) × Δ work ethic	-0.02	.92	no relationship
Training climate (T1) × Δ vocational values	-0.19	.25	no significant relationship (n.s.; presumably power-related)

Note. N = 39. Δ = T2 - T1. With a complete enumeration, p-values are to be interpreted descriptively.

The correlation between training climate and change in work ethic is practically zero (r = -0.02). The correlation with the change in vocational values is statistically non-significant and weakly negative (r = -0.19). Since for r = .19 an N of approximately 210 would be required to reach a test power of 1 - β = .80, the non-significance is with high probability power-related. The low variance of the training climate additionally limits the Test-Power. On this basis, H2 is also rejected, although the weakly negative correlation deserves attention in follow-up studies with a larger sample.

5.3. Trajectory-Type Analysis. Systematic Capture of Interindividual Variability

Aggregate stability describes the arithmetic mean of all participants and is a statistical statement, but not a sociologically sufficient interpretation of what is happening. In order to capture the interindividual variability systematically, the individual change trajectories of the 39 participants were assigned in a model-based manner to three trajectory types by means of a latent profile analysis.

5.3.1. Model-Based Identification of Trajectory Types by Latent Profile Analysis

For the systematic identification of the trajectory types, a latent profile analysis (LPA) was used. The LPA is a model-based procedure that identifies latent subgroups on the basis of a probabilistic measurement model and provides objective quality criteria such as the Bayesian Information Criterion (BIC) and entropy, on the basis of which different solutions can be compared (Nylund et al. 2007). Compared to a threshold-based classification, this has two advantages. First, the profiles are determined not through arbitrarily set cut-off values but in a data-driven manner from the individual change patterns. Second, each participant receives a probability of membership in each profile, which allows a more differentiated interpretation than a rigid group assignment. The individual change values (T2 minus T1) of the vocational values (CVQ) and work ethic (WES) served as indicators. Solutions with two, three, and four profiles were compared. The three-profile solution proved optimal, since it showed the lowest BIC value together with an acceptable entropy of .81 and substantively clearly interpretable profiles. Given the small sample of N = 39, particular care was taken with the stability of the solution during model estimation, which is why the findings retain an exploratory character. The full model selection is documented in the Appendix.

5.3.2. Distribution and Description of the Trajectory Types

Table 4.
Distribution of the trajectory types (N = 39)

Trajectory type	n	Share	Mean change ($\bar{\Delta}$)	Characteristic
Type 1. Value improvement	14	35.9 %	positive ($\bar{\Delta} > 0$)	Measurable improvement on CVQ and/or WES
Type 2. Value stability	18	46.2 %	stable ($\bar{\Delta} \approx 0$)	No notable change between T1 and T2
Type 3. Value deterioration	7	17.9 %	negative ($\bar{\Delta} < 0$)	Decline on both dimensions; outliers up to -0.5 scale points
Total	39	100 %	—	

Note. Δ = mean change from ΔCVQ and ΔWES (T2 minus T1). Profile assignment was carried out in a model-based manner via a latent profile analysis (entropy = .81). Details on model selection are in the Appendix.

Type 1. Value improvement (n = 14; 35.9 %). A good third of the participants show measurable positive changes, above all in social interests and specialization values. The changes concern primarily intrinsic and social value aspects.

Type 2. Value stability (n = 18; 46.2 %). Just under half of the participants show no notable changes on either dimension. The values at T2 lie within the measurement-error corridor around the baseline values at T1.

Type 3. Value deterioration (n = 7; 17.9 %). Just under a fifth show declines on both dimensions, in individual participants up to 0.5 scale points. This group remains entirely invisible in aggregated evaluation logics, which is itself a finding.

The mechanisms that led to these three trajectory patterns were not captured directly, since process variables were not collected prospectively. The theoretical classification of the trajectory types follows in Section 6.3.

6. Discussion

The present study investigated vocational value change in the Austrian prison system over 24 months. Both hypotheses must be rejected, since neither does a systematic value change towards prosocial values become apparent at the aggregate level nor does a positive influence of the training climate on value changes. These null findings are, however, not a failure but, in combination with the latent profile analysis, form the sociologically substantive core of this study. The discussion that follows the three-level logic of the theoretical framework and closes with considerations of the implications for theory and practice.

6.1. Aggregate Stability. What the Findings Mean and What They Do Not

The stable aggregate level appears consistent with Inglehart's socialization hypothesis (1997), according to which basic value orientations might be anchored so deeply in the biography that they remain largely resistant even under the radical contextual changes of incarceration. This finding is of interest for the sociology of values, because total institutions in Goffman's sense (1961) are characterized precisely by the fact that they systematically act on civil identity and attempt to replace it with an institutional identity. That vocational value orientations possibly withstand this mortification might indicate that the biographical sedimentation of values is more robust than institutional approaches frequently assume.

In comparison with longitudinal research on value change, the observed aggregate stability fits into the picture of relative value constancy across the lifespan that meta-analyses and cohort studies draw (Jin and Rounds 2012; Staff et al. 2024; Fukasawa et al. 2020). While these works document stability under ordinary life conditions, the present investigation shows that comparable aggregate stability also holds under the depriving conditions of incarceration. This supports the thesis of a deep biographical anchoring of vocational values, but at the same time raises the question of whether the interindividual scatter visible here would be similarly pronounced in open populations.

At the same time, caution is warranted with this interpretation. The aggregate stability could also be due to methodological artefacts, for example to socially desirable response behavior or to regression effects with a small sample. In addition,

an observation period of 24 months does not permit any statement about whether longer detention periods or more intensive training programmes might produce other patterns. The findings do not demonstrate the absence of any value change, since effects below d = 0.3 would not be statistically detectable. They also do not demonstrate that vocational training is ineffective, because the latent profile analysis shows that about 36 % of the participants exhibit positive developments.

On work ethic in particular. It is interesting that work ethic (WES) shows the smallest effect size of all measured dimensions with d = 0.05. Both subdimensions of the WES, hard work and independence, show no change at all. This might indicate that conscientious work attitudes are deeply anchored biographically and resist institutional influence to a particular degree. Alternatively, it would be conceivable that the prison system as an environment specifically inhibits the development of work ethic, because compulsory participation, restricted personal responsibility, and the absence of external consequences for performance might run counter to an internalization of values of duty and achievement. This interpretation remains speculative and would have to be examined in follow-up studies with qualitative methods.

6.2. The Training Climate as a Possibly Necessary but Not Sufficient Condition

The training climate was rated consistently positively in all six facilities, which on the one hand indicates a successful implementation of the training programmes, but on the other hand considerably limits the statistical testability of H2. If nearly all participants perceive a similarly positive climate, the variance that would be necessary to uncover relationships with value changes is missing. The weakly negative correlation r = -0.19 between training climate and change in vocational values is statistically non-significant but could become relevant in larger samples and therefore deserves attention in future studies.

Theoretically, the training climate could be interpreted tentatively as a condition that enables positive vocational value development without compelling it. Whether a negative climate would systematically favour negative vocational value developments cannot be answered by this study, because no such climate was observed in the present sample. The findings suggest that a good training climate might possibly be necessary but not sufficient for value changes, and that the decisive difference is to be sought at the micro level of individually experienced action cycles.

6.3. Trajectory Types as the Core Finding. Heterogeneity Instead of Average

The sociologically most important finding is not the aggregate stability but the trajectory typology. Behind the same group average lie three qualitatively different groups, namely about 36 % with improvement (Type 1), about 46 % with stability (Type 2), and about 18 % with deterioration (Type 3). This heterogeneity can be interpreted tentatively as evidence that institutional exposure alone does not produce a uniform effect, but that individual factors might co-determine the direction of value development.

For **Type 1** (value improvement) an interpretation within the framework of the Turning Point theory (Sampson and Laub 1993) would be conceivable, because for these participants the training might have acted as a biographical turning point by structuring routines, enabling social embeddedness, and creating experiences of competence that might have shifted value orientations towards intrinsic and social aspects. Consistent with the goal-theoretical model (Hofer et al. 2010) would be the assumption that successfully experienced action cycles might have favoured this development. Which individual preconditions favor Type 1 trajectories, that is whether baseline values, type of offence, age, or the quality of the relationship with the trainer play a role, remains an open question for follow-up studies.

For **Type 2** (value stability) both Inglehart's socialization hypothesis and the protective function of the Good Lives Model (Ward and Stewart 2003) can be invoked tentatively. Biographically sedimented values might have remained stable even under institutional pressure, while the training possibly prevented the depriving conditions of incarceration from leading to an erosion. This protective function would in itself be a relevant finding, because it shows that high-quality training can possibly buffer negative developments even when it does not produce positive transformations.

For **Type 3** (value deterioration) an interpretation within the framework of prisonization research would be conceivable. Clemmer (1940) and Sykes (1958) have shown that total institutions can favor subcultural adaptation processes that counteract resocialization. It would be possible that for these participants training experiences were experienced as meaningless or degrading, which might have reinforced rather than corrected existing negative value attitudes. That this group remains entirely invisible in aggregated evaluation logics is itself a methodologically important finding,

because standardized impact evaluations based on mean comparisons might systematically overlook those participants for whom training programmes have counterproductive effects.

It must be expressly pointed out that these interpretations are hypothetical in nature, since the process variables that might have led to the three trajectory types were not surveyed prospectively in this study. The trajectory typology structures the pattern of findings statistically, but in its substantive interpretation it remains descriptive and is not a causally explained typological theory.

6.4. Subdimension Changes. Differentiated Findings

At the subdimension level, despite global stability, two conspicuous patterns appear that can be interpreted tentatively within the framework of the theoretical model. The increase in the work-life balance orientation (d = 0.30) might be interpretable as a specific reaction to the total-institution character that almost entirely abolishes the boundary between work and life. If inmates have no possibility of shaping work and leisure themselves, the appreciation of this boundary might rise over the course of detention, because it is experienced as something lost. This finding would be consistent with the scarcity hypothesis in a narrower sense, according to which not material goods but autonomy and sovereignty over one's time might be valued more highly as a scarce resource.

The decline in the perceived growth orientation within the training climate (d = 0.42) might indicate a typical motivational arc that can be observed over longer training trajectories, according to which initial enthusiasm and high expectations might have relativized after 24 months under the conditions of detention, without the climate having become objectively worse. An alternative explanation would be that after two years participants have simply developed more realistic assessments of the actual learning opportunities. Both interpretations remain speculative and could be examined in qualitative follow-up studies.

6.5. Implications for Theory and Practice, and Conclusion

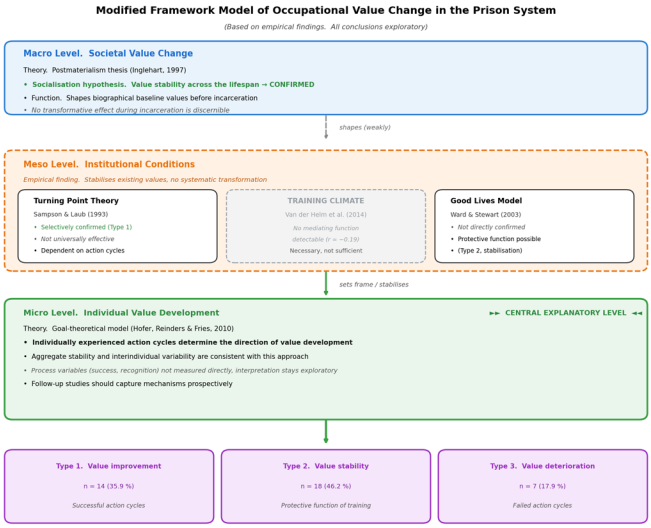
All implications that follow are, given N = 39 and the exploratory design of this pilot study, to be understood as preliminary hypotheses, not as established findings. Uncontrolled influencing factors such as type of offence, age, prior convictions, educational background, religious affiliation, and individual detention experiences could substantially moderate the findings.

For the sociology of values, the findings indicate that aggregate trends might conceal individual trajectory dynamics that are sociologically significant. The trajectory typology as a methodological instrument could help to make visible the heterogeneity that disappears in mean comparisons. It would be conceivable that longitudinal trajectory-type analyses are particularly informative in extreme contexts such as the prison system, because here institutional and biographical logics collide in a particularly sharp way. Future studies should capture process variables such as experiences of success, experiences of recognition, and the quality of the relationship with the trainer prospectively, for example through experience-sampling methods or episodic interviews, in order to test directly the assumed mechanisms behind the trajectory types.

For the practice of the prison system, the findings cautiously suggest that standardized training programmes possibly do not work equally for all participants and that the group of Type 3 trajectories could deserve particular attention. If about 18 % of participants show value deterioration over the course of training, the question arises whether early diagnosis and individually tailored support could interrupt such trajectories. This presupposes that correctional institutions have instruments for systematic trajectory monitoring, which according to current knowledge is not the case across the board in Austrian correctional facilities. Whether reflective conversations, individualized goal setting, or other measures would be suitable cannot be answered by this study. All of this requires confirmation and refinement through larger follow-up studies with a quasi-experimental design.

The modified model in Figure 3 summarizes the empirical findings and visualizes which causal relationships appear stronger or weaker in the present data pattern. It is expressly not to be understood as a revision of theory but as an exploratory reformulation of the initial model on the basis of the present pilot study.

Figure 3.
Modified framework model of vocational value change in the prison system on the basis of the empirical findings. All interpretations remain exploratory.



The present study indicates that vocational training in the prison system does not bring about a systematic transformation of vocational value orientations, but possibly fulfils a stabilizing function by protecting existing value orientations from the depriving effects of incarceration.

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Appendix.
Supplementary Statistical Analyses for the Trajectory-Type Analysis

This appendix documents the supplementary analyses for the longitudinal analysis (T1 to T2) that were not included in the main text for reasons of space. It reports the sample description, the complete results of the paired t-tests, and the model selection of the latent profile analysis.

A.1 Sample Description

The longitudinal analysis is based on two measurement occasions, namely T1 at the start of training and T2 at the end of training. Of the originally 44 apprentices at T1, 39 persons could be surveyed again at T2 (dropout n = 5; 11.4 %).

Table A.1.
Sample overview

Characteristic	Value
Sample T1 (baseline sample)	44
Dropout	5 (11.4 %)
Sample T2 (final longitudinal sample)	39 (88.6 %)
Age. M (SD)	29.5 (7.5) years
Length of detention. M (SD)	9.2 (5.4) years
Training status at T2, still in training	23 (59.0 %)
Training status at T2, completed	11 (28.2 %)
Training status at T2, discontinued	5 (12.8 %)

Table A.2.
Distribution across correctional facilities

Correctional facility	n	%
Graz-Karlau	11	28.2
Suben	10	25.6
Sonnberg	7	17.9
Gerasdorf	3	7.7
Simmering	4	10.3
Stein	4	10.3

Possible reasons for dropout are transfer to another correctional facility, early release, discontinuation of training before T2, and refusal

to participate at T2. The dropout rate of 11.4 % lies within the acceptable range for longitudinal studies in the prison system.

A.2 Results of the Paired t-Tests

To examine systematic changes between T1 and T2, paired t-tests were computed for the three superordinate dimensions. The tests assess whether the means differ significantly between the two measurement occasions.

Table A.3.
Paired t-tests for work ethic, vocational values, and training climate (T1 to T2)

Dimension	T1 M (SD)	T2 M (SD)	Difference	p	Sig.
Work ethic	0.10 (0.46)	0.09 (0.51)	-0.01	.776	n.s.
Vocational values	1.12 (0.50)	1.10 (0.47)	-0.02	.796	n.s.
Training climate	0.91 (0.53)	0.79 (0.60)	-0.12	.252	n.s.

Note. n.s. = not significant ($p > .05$). Negative differences indicate a slight decrease from T1 to T2. The analyses are based on N = 39 matched pairs.

None of the paired t-tests shows a significant difference between T1 and T2 (all p values > .05), and the differences are minimal. On average across all participants there are therefore no systematic changes in work ethic, vocational values, or training climate. This aggregate stability forms the starting point for the subsequent profile-based analysis of interindividual variability.

A.3 Latent Profile Analysis. Model Selection

In addition to the aggregated t-tests, a latent profile analysis was conducted in order to make the interindividual heterogeneity of trajectories visible. On the basis of the individual change patterns between T1 and T2, the analysis identifies distinct trajectory types without requiring them to be defined in advance.

Models with two, three, and four profiles were compared. Model selection was based on the Bayesian Information Criterion (BIC; lower = better) and on entropy (higher = clearer profile assignment; good from values of .80 onward). The three-profile solution proved optimal, because it showed the lowest BIC value together with acceptable entropy (.81) and substantively interpretable profiles. The three resulting profiles correspond to the trajectory types of value improvement, value stability, and value deterioration reported in the main text (Section 5.3).