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Between Formal Control and Relational Support: Explaining Prison Security Climate in Serbia[1]

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Purpose:

The study examined how institutional factors and perceived support from staff and inmates predict security-related dimensions of the Measuring the Quality of Prison Life (MQPL) framework among male prisoners in Serbia. The aim was to identify institutional and relational factors that shape perceptions of safety, adaptation and order in a Southeast European prison context.

Methods:

Data were collected from 525 male prisoners (mean age 40 years) across four prisons. A series of standard multiple regression analyses was conducted with prison regime (closed/semi-open), extended cell lockdown, disciplinary measures, and perceived support from treatment staff, security staff, and inmates as predictors of five MQPL-based security-related outcomes.

Findings:

Prison regime and support from security staff consistently predicted all security-related MQPL outcomes. Semi-open regimes and greater perceived support from security staff were associated with more favourable perceptions of safety, adaptation, and institutional order. Extended cell lockdowns negatively affected adaptation and safety. Support received from prisoners and treatment

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Declaration of Interest statement
The author declares to have no competing financial interests or personal relationships that could have appeared to have influenced the work reported in this paper.

Data availability statement
The data that support the findings of this study are available at the Data Centre Serbia for Social Sciences repository; restrictions apply to their availability (Milićević, et al. 2024a).

staff contributed positively across several models.

Research Limitations/Implications:

Findings rely primarily on self-report data and only reflect individual-level perceptions. The sample comprised male prisoners, limiting generalisability to women, juveniles, or open-type institutions. Future research should incorporate multilevel analyses and broader populations.

Practical Implications:

Results show the need to reduce reliance on closed regimes, minimise extended lockdowns, and strengthen staff training focused on communication, relationship-building, and proactive problem-solving.

Originality:

As the first empirical evidence on predictors of prison security climate in Serbia, the article addresses a major geographical gap and offers context-specific insights concerning prison management and policy development.

Keywords: prison climate, security, MQPL framework, Serbia, perceived support

UDC: 343.81(497.11)

Med formalnim nadzorom in podporo v odnosih: razlaga varnostne klime v zaporih v Srbiji

Namen:

Prispevek proučuje, kako institucionalni dejavniki in zaznana podpora zaposlenih ter zaprtih oseb napovedujejo varnostne dimenzije v okviru merjenja kakovosti življenja v zaporu (angl. *Measuring the Quality of Prison Life* (MQPL)) med moškimi zaporniki v Srbiji. Cilj je bil opredeliti institucionalne in medosebne dejavnike, ki oblikujejo zaznave varnosti, prilagajanja in reda v zaporskem okolju jugovzhodne Evrope.

Metode:

Podatki so bili zbrani na vzorcu 525 moških zapornikov (povprečna starost 40 let) v štirih zaporih. Izvedena je bila vrsta standardnih večkratnih regresijskih analiz, pri katerih so bili kot napovedni dejavniki uporabljeni zaporski režim (zaprti/polodprti), podaljšano zapiranje v celice, disciplinski ukrepi ter zaznana podpora strokovnega osebja, varnostnega osebja in sojetnikov, za napoved petih varnostnih izidov, temelječih na MQPL.

Ugotovitve:

Zaporski režim in podpora varnostnega osebja sta dosledno napovedovala vse varnostne izide MQPL. Polodprti režimi in večja zaznana podpora varnostnega osebja sta bila povezana z ugodnejšimi zaznavami varnosti, prilagajanja in institucionalnega reda. Daljše zapiranje v celice je negativno vplivalo na prilagajanje in varnost. Podpora sojetnikov in strokovnega osebja je pozitivno prispevala v več modelih.

Omejitve/uporabnost raziskave:

Ugotovitve temeljijo predvsem na podatkih samoocene in odražajo zgolj zaznave na ravni posameznika. Vzorec je zajemal le moške zapornike, kar omejuje posploševanje na ženske, mladoletnike ali odprte tipe ustanov. Prihodnje raziskave bi morale vključiti večnivojske analize in širše populacije.

Praktična uporabnost:

Rezultati poudarjajo potrebo po zmanjšanju zanašanja na zaprte režime, omejevanju daljših zapiranj v celice ter krepitvi usposabljanja osebja s poudarkom na komunikaciji, gradnji odnosov in proaktivnem reševanju problemov.

Izvirnost/pomembnost raziskave:

Prispevek predstavlja prvo empirično potrditev napovednih dejavnikov varnostne klime v zaporih v Srbiji in s tem zapolnjuje pomembno geografsko vrzel ter ponuja kontekstualno specifične vpoglede, pomembne za upravljanje zaporov in razvoj politik na tem področju.

Ključne besede: zaporska klima, varnost, okvir MQPL, Srbija, zaznana podpora

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1 INTRODUCTION

Prisons are complex social institutions governed by the interconnected objectives of safety, order and rehabilitation (Maycock, 2023; Pabjan, 2005). In recent decades, researchers have increasingly considered how prisoners experience institutional environments and the way these experiences influence their behaviour, well-being, and perceived institutional legitimacy. A central line in this research is the concept of prison climate, which captures the social, organisational and relational dynamics that structure everyday life in custody (Liebling & Arnold, 2004; Ross et al., 2008; Van Ginneken & Nieuwbeerta, 2020). Understanding the factors which shape prison climate is particularly important in penal systems undergoing institutional reform or operating under structural pressures, such as the one in Serbia (Aebi & Cocco, 2024; Jovanić et al., 2020; Milićević & Hacin, 2025; Oleinik, 2007; Stevanović, 2025).

A secure environment is essential for both prisoners and staff because it enables effective rehabilitation and ensures that custodial sentences are implemented in a humane manner (Liebling et al., 2021; Liebling & Arnold, 2012). The security climate within prisons affects the social dynamics and power relations, which are crucial for maintaining order and promoting positive interactions between the staff and prisoners (Ahmed et al., 2025; Kilmer et al., 2023; Santorso, 2021). Despite its centrality, the security dimension of prison climate remains comparatively underexplored, particularly in underrepresented regional contexts. The current study therefore examines how institutional arrangements and perceived support add to the security dimension of prison climate in Serbian correctional facilities.

1.1 The Concept of Prison Climate

Truly understanding prison life requires one to look beyond the formal rules and institutional structures. We must also consider how prisoners and staff experience day-to-day interactions, authority, and social order in these settings. The idea of prison climate helps capture these experiences and relationships, having become a key notion while studying the quality of life and management in prisons. Prison climate is a complex, multidimensional concept that describes the lived environment of prisons (Bosma et al., 2020; Liebling et al., 2012; Peart et al., 2025). As an overarching term, it encompasses the social, emotional, organisational and physical characteristics of a correctional institution as experienced by those living and working within it (Ross et al., 2008). Prison climate includes perceptions of safety, the quality of relationships (with staff and peers), autonomy, access to meaningful activities, contact with the outside world, and the overall quality of institutional life (Liebling et al., 2012; Peart et al., 2025; Ross et al., 2008; Stasch et al., 2018; Van Ginneken & Nieuwbeerta, 2020). A positive prison climate is associated with better well-being, lower rates of misconduct, and improved rehabilitation outcomes for prisoners, as well as reduced stress and increased safety for staff (Auty & Liebling, 2020; St. Louis et al., 2023; Van Ginneken et al., 2019). Conversely, a negative climate can exacerbate mental health problems and hinder personal development (Gonçalves et al., 2016; Goomany & Dickinson, 2015).

As Wenk and Moos (1972) define it, this climate is a product of the constant interaction between the attributes of the people in the environment (e.g., inmates, staff, patients) and the institution's physical and organisational attributes, such as its architecture, rules, and management style. It is therefore not static; it can vary between institutions and even between units within the same prison since it influenced by factors such as security level, staff–prisoner relationships, and available resources (Bosma et al., 2020; Green et al., 2023; Peart et al., 2025; Van Ginneken & Nieuwbeerta, 2020).

Empirical research highlights that the social environment, relational dynamics, and institutional conditions within correctional facilities largely determine the prison climate. A more favourable prison climate can improve prisoners' overall well-being and mental health, along with their motivation to actively engage in treatment, while a negative climate can intensify issues like institutional misconduct and victimisation (Calles-Rubiales & Ibáñez del Prado, 2020; Engstrom & Van Ginneken, 2022; Međedović et al., 2024a; Sauter et al., 2019; Stasch et al., 2018; Van Ginneken, 2022; Van Ginneken & Nieuwbeerta, 2020). A positive climate, as perceived by prisoners, is one where they regard the staff as compassionate and respectful, and believe they are being treated with procedural fairness (Hulley et al., 2012; Molleman & Leeuw, 2012; Schalast & Laan, 2017).

When it comes to interpersonal relations, supportive staff–prisoner relationships are important (Crewe et al., 2015; Liebling et al., 2021). Several lines of evidence suggest that therapeutic engagement and positive interactions with prison staff can promote treatment motivation, enhance rehabilitation prospects, reduce recidivism, and foster a sense of safety (Beech & Hamilton-Giachritsis, 2005; Blagden et al., 2016; Bobić et al., 2022; Goossens et al., 2025; Sauter et al.,

2019; Stasch et al., 2018). Auty and Liebling (2020) found that a positive prison climate – characterised by safety, fairness, and supportive staff relationships – adds to prisoners' motivation for and engagement in rehabilitation. The dynamics between prisoners, notably among cellmates, can also significantly influence the overall prison environment (Molleman & Van Ginneken, 2015). For instance, conflicts often contribute to increased misconduct and a negative prison climate, especially among those who prefer single cells (Van Ginneken, 2022). Williams et al. (2019) established that support from other prisoners and from staff was the strongest predictor of liveability in a secure prison environment.

1.2 The Security Dimension of Prison Climate

Although prison climate is frequently examined through relational dynamics, the security dimension also warrants separate analytical attention since it shapes how authority, control and legitimacy are experienced in everyday prison life. Prison climate is thus not only influenced by interpersonal relations but by institutional factors such as the type of prison regime, the extent of daytime cell lockdown, misconduct and disciplinary practices, all of which contribute to how prisoners experience daily life (Bosma et al., 2020; Goossens et al., 2025; Hacin, 2018; Harding, 2014; Mjåland et al., 2023; Molleman & Van Ginneken, 2015; Wolff & Shi, 2009). This also includes the security aspect; namely, one of the constitutive components of the prison climate (Kilmer et al., 2023; Liebling et al., 2021; Liebling & Arnold, 2012; Prior, 2020). Formal security is often labelled as objective security and refers to the physical and procedural measures implemented by an institution. On the other hand, felt security, also known as subjective or perceived security, is an individual's perception of safety and threat (Jovanić et al., 2020; Wolff & Shi, 2009). Both forms of security shape the prisoner experience (Liebling & Arnold, 2012; Ricciardelli & Sit, 2016).

Security is a core element of the prison climate as it affects the quality of life for prisoners, rehabilitation outcomes, and safety perceptions within correctional facilities (Skar et al., 2019). The social dynamics and power relations within prisons are affected by security (Crewe et al., 2015; Martens & Crewe, 2025), which is best addressed via effective prison management that includes intelligence and proactive security measures to provide a stable and safe environment for prisoners (Barcelos et al., 2024).

A line of studies states that positive security fosters trust and legitimacy, in turn reducing violence, misconduct and victimisation, and creating a stable environment necessary for daily operations (Bosma et al., 2020; Palmen et al., 2022; Wooldredge, 2020). A secure climate reduces stress and anxiety for both staff and prisoners, improves mental health and job satisfaction for staff, as well as adjustment and well-being for prisoners (Palmen et al., 2022; St. Louis et al., 2023; Van Ginneken et al., 2019). Security is also recognised as a precondition for implementing meaningful activities, rehabilitation programmes, and supportive relationships (Bosma et al., 2020; Gibson, 2021; Kinman & Clements, 2022; Wooldredge, 2020). For instance, in the Correctional Institution for Women in Požarevac, Serbia, security was identified as a central factor in the overall

prison experience, influencing the power dynamics between staff and prisoners (Stevanović, 2025). A study conducted in small Australian prisons found that lower security levels were associated with better perceptions of safety and cohesion, which led to the conclusion that a positive security climate helps provide a more supportive and cohesive environment (Peart et al., 2025).

1.3 Institutional Context of the Serbian Prison System

To understand how security is structured and experienced within the climate of prisons, transitional penal systems such as Serbia's offer an analytically revealing context. The Serbian prison system combines elements of post-socialist institutional transformation with a continued emphasis on custodial control, creating conditions where institutional constraints and relational dynamics may interact in distinct ways. The Serbian prison system is characterised by a relatively high prison population rate, overcrowded facilities, and a high prisoner-to-staff ratio (Aebi & Cocco, 2024; Jovanić et al., 2020). Even though state spending per convict is less than in other European countries, the system still experiences high admissions rates. Serbia has been shown to have a relatively low rate of escapes and short prison terms, but unfortunately also a high prison mortality rate, particularly concerning suicide (Aebi & Cocco, 2024).

Over the past three decades, Serbian prisons have faced numerous issues such as political changes, economic challenges, overcrowding, and the need for modernisation. Reforms have included amendments to the Law on the Execution of Criminal Sanctions, new prison architecture, and the gradual introduction of alternative sanctions (Jovanić et al., 2020). Still, order and safety are chiefly maintained through security and control, which are usually justified by the insufficient staffing of specialists and lack of rehabilitation programmes (Bobić et al., 2022; Ćopić et al., 2024). In terms of organisation, recent shifts toward maximum-security facilities and stricter parole conditions reflect a persistent stress on control measures (Vujičić, 2023). However, the limited development of rehabilitation programmes and the continuing prioritisation of security raise concerns about the system's effectiveness in supporting prisoners' rehabilitation and reintegration into society (Bobić et al., 2022; Ilijić et al., 2024).

1.4 Assessing Prison Climate and its Security Aspects with the MQPL Framework

To empirically examine the security dimension of prison climate, a framework is required that captures both institutional control and relational experience from the prisoners' perspective. The MQPL framework is quite suitable for this purpose as it integrates structural, relational and moral components of prison life into a multidimensional assessment tool. The MQPL framework was originally developed by the Cambridge Institute of Criminology Prisons Research Centre to assess various aspects of the social and moral climate within prisons. In general, the MQPL survey evaluates prisoners' subjective experiences of prison life, including *Harmony*, *Professionalism*, *Security*, *Conditions and Family Contact*, and *Well-being and Development* (Liebling et al., 2012). It is used to understand and

improve the quality of life for a prisoner by capturing their subjective experiences and perceptions of their environment. The MQPL framework has been adapted for use in different cultural contexts, such as Serbia, to ensure its relevance and accuracy in diverse prison systems (Međedović et al., 2024b; Milićević et al., 2024b).

In MQPL terms, *Security* includes both formal institutional control and informal prison dynamics. Weak or inconsistent supervision is associated with a perceived loss of institutional control, leading to a shift in power and undermining legitimacy and safety (Brunton-Smith & McCarthy, 2016; Crewe, 2011; Liebling, 2004). Auty and Liebling (2024) argued that dimensions such as harmony, security, and professionalism are crucial for maintaining a minimally safe environment and reducing incidents of violence.

The MQPL was selected because it offers a theoretically grounded and empirically validated framework that captures prisoners' lived experience of institutional life and does not rely on administrative indicators of order and misconduct. By integrating multiple dimensions of prison climate, MQPL aligns with the conceptual framework of this study. Yet, as a self-report instrument, MQPL depends on subjective perceptions and may be influenced by momentary attitudes or individual expectations. While the broader MQPL+ version includes additional modules (e.g., staff perspectives and contextual indicators), the present study focuses specifically on the core prisoner survey and its security-related dimensions to isolate prisoners' security perceptions. This narrower focus reflects the study's aims rather than a limitation of the broader MQPL framework.

1.5 Rationale for the Current Study

Although prison climate has become a core concept in contemporary penology, important analytical and geographical gaps remain. Empirical knowledge continues to be geographically concentrated in Western jurisdictions, limiting comparative understanding of prison climates in other penal systems. Namely, much of the existing literature comes from Western Europe, the United Kingdom, the United States, and Australia, which creates a strong geographical bias and limits insights regarding other penal systems (Milićević, 2024b). Evidence from Southeast Europe is particularly scarce, including countries such as Serbia, which feature traditional prison regimes and ongoing reforms (Nivette, 2025). Conceptually, the climate of a prison is a shared social experience influenced by both institutional and relational factors, which is often overlooked in prison research (Van Ginneken & Nieuwbeerta, 2020).

To address these gaps and investigate the security dimension of prison climate in underrepresented regions like Serbia, the present study examines how institutional factors (prison regime, extended cell confinement, disciplinary measures) and perceived support (from treatment and security staff, as well as fellow inmates) predict security-related dimensions of prison climate measured by the MQPL framework. By analysing these factors among a large sample of male prisoners in Serbia, the cross-sectional study provides empirical evidence on

how both structural and relational aspects of prison life influence security-related outcomes in a Southeast European context.

2 METHODS

In this study, a cross-sectional, multi-site research design was employed to determine how institutional factors and perceived support predict security-related dimensions of prison climate. The following sections describe the sampling strategy, data collection procedures, participant characteristics, measures, and analytical approach.

2.1 Participants and Procedure

The study forms part of the PrisonLIFE project, a nationally funded research initiative investigating quality of life and prison climate in Serbian correctional institutions (Milićević et al., 2023). The cross-sectional data were collected in four correctional facilities in Serbia: Sremska Mitrovica, Niš, Zabela, and Beograd. These institutions were selected to ensure a representative cross-section of Serbia's prison system by including the largest correctional facilities that vary by size, security level, and prisoner profile. To assure a uniform sample, we excluded institutions with different operational models, such as open-type and juvenile facilities, and focused exclusively on male prisoners, since previous research indicates that female prisoners may have a different prison experience (Bucerius & Sandberg, 2022; Jiang & Winfree, 2006; Milićević, 2024a; Prost et al., 2020; Zettler, 2020). Participants were recruited between May 2022 and January 2023. Convenience sampling was used. Eligibility required voluntary participation with informed signed consent, having served at least 30 days, and functional literacy in Serbian. The research team administered paper-and-pencil questionnaires in a single session, remained present to assist if required, and directly collected the questionnaires in sealed envelopes. Participants generally completed the instrument without difficulty, suggesting the adapted version was comprehensible and contextually appropriate (Milićević et al., 2024b).

For the purpose of this study, the final sample only included participants who gave complete data for the outcome variables. The recruitment protocol, consent procedures, and consent form were approved by the Ethics Committee of the Institute for Criminological and Sociological Research (No. 103/2020) and the research was conducted in line with the 1964 Helsinki Declaration and later amendments to it.

The final sample consisted of 525 male prisoners, namely, 7.17% of the national incarcerated population (n = 7,324; Aebi & Cocco, 2024). The overall response rate was 10.75% for the total population of the four participating prisons (n = 4,883; Administration for the Enforcement of Penal Sanctions, official communication, 2023, No. 138/23), with rates varying for the individual prisons (Sremska Mitrovica: 10.66%; Niš: 12.07%; Zabela: 8.24%; and Beograd: 34.52%). The average age of participants was 40 years. The majority were from Sremska Mitrovica (36%) and Niš (34%) and were housed in closed-type regimes (74%). The average

sentence was 8 years and 3 months, with most prisoners having served more than 1 year (73%). Approximately half had committed non-violent crimes and were first-time prisoners (50% and 49%, respectively), while over one-third (38%) had had disciplinary measures imposed on them during their incarceration (Table 1).

Table 1: Sample Characteristics

Variable	*n*	%
Prison		
Sremska Mitrovica	190	36.2
Niš	181	34.5
Zabela	125	23.8
Beograd	29	5.5
Prison regime		
Closed [a]	390	74.3
Semi-open	135	25.7
Type of criminal offence		
Violent crime	247	47.0
Non-violent crime	262	49.9
Time served		
12 months or less	141	26.7
1 year or more	385	73.4
Discipline measures imposed [b]	200	38.1
First-time prisoners [b]	258	49.1
Extended cell lockdown [b, c]	186	35.4
Education		
Elementary school or lower	146	27.8
High school or higher	363	69.1
Age (in years)	*M* = 39.99, *SD* = 10.18, *Mdn* = 39.00, Min = 20, Max = 73	
Sentence length	*M* = 8 years 3 months, *SD* = 8 years 6 months, *Mdn* = 5 years, Min = 1 year, Max = 40 years	

Note. $n = 525$

[a] Maximum-security units are included [b] Reflects the number and percentage of participants answering "yes" to this question [c] More than 6 hours/day

2.2 Measures

The study was based on a self-report methodology, which included the MQPL survey along with questions on perceived support, disciplinary measures, and extended cell confinement. The MQPL survey was administered to explore the prisoners' lived experiences and perceptions of the prison climate. For this study, we selected four key security-related dimensions of the MQPL survey: *Policing and security* (9 items, reflecting staff's ability to maintain order), *Prisoner safety* (5 items, the individual's sense of being protected against harm), *Prisoner adaptation* (3 items,

how prisoners cope with the social structure), and *Drugs and exploitation* (5 items, exposure to substance use and victimisation). The *Global Security score* provides an overall measure of the perceived security environment. Based on a 5-point Likert scale, all five scores were calculated as an average of the corresponding items, where higher scores indicate a better quality of prison life. The MQPL survey has been adapted for use in Serbia (Međedović et al., 2024b; Milićević, et al., 2024b). Its cultural relevance was ensured following modifications to the language and structure. This adaptation process involved expert panels and focus groups to achieve equivalence with the original survey. Further, the Serbian version of MQPL has demonstrated high reliability and validity, and its central aspects of prisoners' quality of life were confirmed (Međedović et al., 2024b). The mentioned version was developed in a systematic cultural adaptation process involving expert review and prisoner focus groups, making sure of conceptual, semantic and experiential equivalence with the original instrument (Milićević et al., 2024b).

Perceived support was measured on a 5-point scale assessing the importance of support from treatment staff, security staff, and fellow prisoners. Disciplinary measures were assessed by four binary indicators (reprimand, restriction of packages, withdrawal of incentives, and monetary restrictions; coded as 0 = not applied and 1 = applied), summed and averaged into a composite score.2 Extended cell confinement was also a binary variable, with prisoners asked whether they usually spent six or more hours locked in their cells during the daytime (0 = no, 1 = yes). Finally, the prison regime was recorded as an objective, dichotomous variable (0 = closed, 1 = semi-open).

2.3 Data Analysis

Apart from descriptive statistics generated for all variables, we conducted a series of standard multiple regression analyses to examine how institutional conditions and perceived support predict each of the five MQPL-based indicators of the prison security climate. The predictors included the prison regime, extended daytime cell lockdown, number of disciplinary measures, and perceived support from treatment staff, security staff, and other prisoners. With six predictor variables, the required minimum sample size was 98 (Tabachnick & Fidell, 2019). The current sample size of 525 exceeded this value. Assumptions of linearity, homoscedasticity, normality, and independence of residuals were all met. We checked for multicollinearity using correlation matrices and collinearity diagnostics (tolerance and VIF) and removed outliers that exceeded three standard deviations. Standardised coefficients (β) were used to compare predictors, and unstandardised coefficients (B) were used to interpret their effects. Reliability was calculated using Cronbach's alpha. A p value < .05 was considered significant.

3 RESULTS

This section presents the descriptive statistics and regression analyses examining how institutional factors and perceived support predict security-related

2 *The four binary indicators for disciplinary measures align with items 1–4 in Article 159 of the ('Zakon o izvršenju krivičnih sankcija' [Law on the execution of criminal sanctions], 2019)*

dimensions of prison climate. First, we report reliability indices and descriptive statistics for all study variables. We then present the results of multiple regression models for each MQPL security-related outcome.

Table 2 presents the descriptive statistics for all key study variables. The MQPL scores demonstrated acceptable to excellent internal consistency (α = 0.72 to 0.91). The lowest mean score was for *Drugs and Exploitation* (*M* = 2.97) and the highest for *Prisoner Adaptation* (*M* = 3.77). Perceived support was highest for security staff (*M* = 3.61) and lowest for fellow prisoners (*M* = 3.06). The disciplinary measures index demonstrated lower internal consistency (α = .59), with most prisoners reporting few or no disciplinary sanctions (*M* = 0.57).

Table 2: Descriptive Statistics of Key Study Variables

Scores	α	*M*	*SD*	*Mdn*	Min	Max
MQPL – Drugs and exploitation	.83	2.97	0.98	3.00	1.00	5.00
MQPL – Prisoner adaptation	.72	3.77	0.92	4.00	1.00	5.00
MQPL – Prisoner safety	.74	3.51	0.84	3.60	1.00	5.00
MQPL – Policing and security	.75	3.33	0.67	3.33	1.33	5.00
MQPL – Global security score	.91	3.35	0.69	3.36	1.27	5.00
Disciplinary measures	.59	0.57	0.88	0.00	0.00	4.00
Support – Treatment staff		3.43	1.59	4.00	1.00	5.00
Support – Security staff		3.61	1.41	4.00	1.00	5.00
Support – Inmates		3.06	1.37	3.00	1.00	5.00

Note. *n* = 525; MQPL = Measuring the Quality of Prison Life (theoretical range 1–5); Support = Perceived importance of support (theoretical range 1–5).

Table 3 summarises the standard multiple regression analysis. The first model explained 27% of the variance of the *Drugs and exploitation* score. Being in a semi-open regime significantly predicted lower perceptions of drug use and exploitation (β = .27). Greater perceived support from security (β = .21) and treatment staff (β = .10) and fellow prisoners (β = .13), along with fewer disciplinary measures (β = -.10), were also significant predictors. A 1-point increase in perceived support from security staff is associated with a 0.15-point increase in this score. Prisoners in semi-open regimes score 0.60 points higher on the *Drugs and exploitation* scale than those in closed regimes.

The second model accounted for 20% of the variance of the *Prisoner adaptation* score. Less time spent in cell lockdown (β = -.21) and being in a semi-open regime (β = .13) significantly predicted better adaptation. Support from treatment (β = .11) and security staff (β = .18) also had significant positive effects, but not from other prisoners. A move from a closed to a semi-open regime is associated with a 0.26-point increase, while extended daytime cell confinement decreases the *Prisoner adaptation* score by 0.40 points (Table 3).

Regarding the *Prisoner safety* score, the model explained 24% of the variance. Prison regime (β = .20), cell lockdown duration (β = -.21), and perceived support from security staff (β = .22) and prisoners (β = .15) were significant predictors. Being in a semi-open regime predicted a 0.38-point increase in perceived safety, in

contrast to extended cell lockdown, which reduced it by 0.36 points. Disciplinary measures and support from treatment staff were not associated with perceived safety (Table 3).

As for the *Policing and security* score, the model explained 23% of the variance. Support from security staff showed the strongest association (β = .27). The prison regime (β = .13), perceived support from prisoners (β = .13), and cell confinement (β = -.16) were also significant. Each additional point in perceived security staff support increases this score by 0.13, while extended cell confinement leads to a 0.22-point decrease. Disciplinary actions and support from treatment staff had no predictive value (Table 3).

Finally, the last model explained 31% of the variance in the *Global Security* score. Being in a semi-open regime significantly predicted more positive perceptions of overall security (β = .21). Less extended cell confinement (β = -.18) and greater perceived support from treatment staff (β = .11), security staff (β = .25), and prisoners (β = .15) were all significant predictors. A shift from a closed to a semi-open regime is associated with a 0.34-point increase in the *Global Security* score, whereas an extended cell lockdown decreases this score by 0.26 points. Security staff support adds 0.12 to the score. The number of disciplinary measures, however, was not a significant predictor in this model (Table 3).

Table 4: Regression Models for the Prediction of Security-related Aspects of the Prison Climate

MQPL Scores	Predictors/Model	*B*	*SE (B)*	β
Drugs and exploitation	Prison regime	.60	.10	**.27****
	Extended cell lockdown	-.15	.09	-.07
	Disciplinary measures	-.11	.05	**-.10***
	Support – Treatment staff	.06	.03	**.10***
	Support – Security staff	.15	.03	**.21****
	Support – Inmates	.09	.03	**.13****
	Model R^2 / Adj. R^2	.27 / .26		
	F (*df1, df2*)	28.44 (6, 473)**		
Prisoner adaptation	Prison regime	.26	.09	**.13****
	Extended cell lockdown	-.40	.08	**-.21****
	Disciplinary measures	-.07	.05	-.07
	Support – Treatment staff	.06	.03	**.11***
	Support – Security staff	.11	.03	**.18****
	Support – Inmates	.03	.03	.05
	Model R^2 / Adj. R^2	.20 / .19		
	F (*df1, df2*)	19.29 (6, 471)**		

Prisoner safety	Prison regime	.38	.08	**.20****
	Extended cell lockdown	-.36	.08	**-.21****
	Disciplinary measures	.01	.04	.01
	Support – Treatment staff	.07	.02	.07
	Support – Security staff	.13	.03	**.22****
	Support – Inmates	.10	.03	**.15****
	Model R^2 / Adj. R^2	.24 / .23		
	F (*df1, df2*)	24.90 (6, 473)**		
Policing and security	Prison regime	.20	.07	**.13****
	Extended cell lockdown	-.22	.06	**-.16****
	Disciplinary measures	-.04	.03	-.05
	Support – Treatment staff	.03	.02	.08
	Support – Security staff	.13	.02	**.27****
	Support – Inmates	.06	.02	**.13****
	Model R^2 / Adj. R^2	.23 / .22		
	F (*df1, df2*)	23.84 (6, 470)**		
Global security score	Prison regime	.34	.07	**.21****
	Extended cell lockdown	-.26	.06	**-.18****
	Disciplinary measures	-.05	.03	-.06
	Support – Treatment staff	.05	.02	**.11***
	Support – Security staff	.12	.02	**.25****
	Support – Inmates	.07	.02	**.15****
	Model R^2 / Adj. R^2	.31 / .30		
	F (*df1, df2*)	34.66 (6, 473)**		

Note. $n = 525$; MQPL = Measuring the Quality of Prison Life (theoretical range 1–5); *SE* = Std. Error; *B* = unstandardised coefficient; β = standardised beta coefficient; *R2* = determinant multiple correlation coefficient; Adj. *R2* = adjusted multiple correlation coefficient; Prison regime = coded as closed = 0, and semi-open = 1; Extended cell lockdown = coded as no = 0, and yes = 1; Support = Perceived importance of support (theoretical range 1–5).

* $p < .05$. ** $p < .01$. Statistically significant predictors are shown in bold.

4 DISCUSSION

In this study, we investigated how institutional factors (prison regime, extended cell confinement, disciplinary measures) and perceived support (from treatment staff, security staff, and other prisoners) predict security-related dimensions of the prison climate in four Serbian male prisons. The findings raise important questions about how security is constructed, experienced and governed within contemporary prison systems, particularly in contexts such as Serbia.

4.1 Overview of the Main Findings

Taken together, the findings indicate that prisoners' perceptions of security are shaped by the interplay of institutional arrangements and relational dynamics. Across the models, being in a semi-open regime consistently predicted better security outcomes, while support from security staff had the largest positive effect across all outcomes. Extended daytime confinement was associated with lower scores in four of five models, with the strongest effect on prisoner adaptation and safety. On the other hand, disciplinary measures predicted the *Drugs and exploitation* score only.

Overall, institutional context, which is operationalised through the prison regime and daytime confinement practices, together with supportive staff–prisoner relationships, appears central in structuring evaluations of safety, adaptation and order. In their multilevel analysis of Dutch prisons, Van Ginneken and Nieuwbeerta (2020) argued that the majority of variance in how prisoners perceive the climate is on the individual level (not the unit or prison level). Our results extend this conclusion by demonstrating the strong predictive power of those variables related to subjective individual experience, such as perceived support from security staff and the negative impact of extended cell confinement.

4.2 Institutional Structures and the Role of Prison Regime

The findings underscore the importance of institutional structure as a foundational determinant of the way security is perceived within prison environments. The prison regime, a component of formal security, was a significant predictor of security perceptions. In other words, the distinction between closed and semi-open regimes provides a concrete illustration of how formal security arrangements translate into lived experience. The architectural design and operational procedures of a closed-type facility rely more heavily on traditional, coercive security measures compared to a semi-open regime (Midtlyng, 2022; Prior, 2020; Ricciardelli & Sit, 2016). This suggests that the very structure of the prison environment, conceptualised as a core component of formal security (Kilmer et al., 2023; Liebling et al., 2021; Liebling & Arnold, 2012; Prior, 2020), has an evident impact on how prisoners perceive their safety and adaptation (Ricciardelli & Sit, 2016). More specifically, our finding that the prison regime was the strongest predictor of the *Drugs and Exploitation* score indicates that the institutional structure is closely linked to inmates' perceptions of and involvement in problematic behaviours such as the informal prison trade, allegiances, and experiences of threat or exploitation, which are more pronounced in closed regimes, and hence indicate a more favourable climate in semi-open ones.

4.3 Extended Cell Confinement and Access to Activities

Beyond formal regime type, everyday practices such as extended cell confinement play an important role in how security is experienced in daily prison life. Our finding that extended cell confinement negatively impacts a prisoner's sense of adaptation, safety, policing, and overall security aligns with evidence that access

to meaningful activities is central to a positive prison climate. As Stacer (2022) argues, the absence of such activities is a major source of negative prisoner perceptions. Engaging in structured activities can promote positive social interactions among prisoners (Hall & Chong, 2018) and reduces aggression (Tomescu et al., 2024), which are both critical for maintaining safety and institutional order. Therefore, extended cell lockdowns not only physically limit access to these beneficial activities but also interfere with prisoners' ability to adapt and integrate successfully within the correctional environment. Moreover, positive interactions with staff and a supportive climate are associated with a better prison experience and can also add to prisoners' motivation for treatment and rehabilitation (Sauter et al., 2019; Stasch et al., 2018). On the other hand, a hostile or restrictive environment, shaped by negative cellmate dynamics or architectural constraints, undermines well-being and increases the likelihood of misconduct in prison (Engstrom & Van Ginneken, 2022; Van Ginneken, 2022). In this context, extended physical confinement itself can be a source of psychological distress and interpersonal tensions by restricting social interaction and autonomy, in turn contributing to less favourable perceptions of the prison climate.

4.4 Disciplinary Measures and Negative Security Climate

In addition, disciplinary actions have an influence on the broader quality of the security climate. Consistent with the literature on misconduct and the relational climate, this study confirms that disciplinary measures are a predictor of the *Drugs and Exploitation* score, which addresses exposure to substance use, bullying, and victimisation. For example, units with lower average safety scores had more reported misconduct (Van Ginneken & Nieuwbeerta, 2020). Factors like poor mental health and a hostile environment, frequently attributed to cell-sharing, can result in dysfunctional behaviours and increased prison misconduct (Calles-Rubiales & Ibáñez del Prado, 2020; Skar et al., 2019; Van Ginneken, 2022). High pressure to adapt informally signals structural gaps in safety and equity, placing vulnerable inmates at risk (Wooldredge, 2020). Since disciplinary measures are a direct consequence of such misconduct, they can be interpreted as a mediator for a negative, rule-violating climate (Međedović et al., 2024a). Therefore, our finding confirms that an institutional response to misconduct (disciplinary measures) is essentially linked to the presence of a negative environment characterised by substance use, bullying, and victimisation (as captured by the MQPL *Drugs and Exploitation* score).

4.5 Relational Dynamics, Staff Support, and Felt Security

The results suggest that security cannot be reduced to institutional design alone but is actively constructed by relational processes within day-to-day prison life. Both prisoners and staff tend to rate the prison climate more positively, and the prison environment as safer, more cohesive, and more supportive when more rehabilitation opportunities are offered (Madoc-Jones et al., 2016). Blagden et al. (2016) identified positive prisoner views toward staff and a sense of safety as key components of the positive prison climate. According to our findings, prioritising

supportive relationships with prison staff is a preventive tool for improving prisoners' experience in prison related to safety and security, as hypothesised by Madoc-Jones et al. (2016). This means that staff training and relationship-building are important steps in creating a climate of safety (Peart et al., 2025).

Midtlyng (2022) found that a rigid, rule-based approach to security is often challenged by the daily social dynamics of a correctional environment. Our results show this since perceived support from security staff had the largest positive effect on the overall security climate. This indicates that officers' situational judgments, informed by their direct relationships with prisoners, often dictate safety outcomes more than the formal rulebook, and that reliance on purely formal controls, which is common in a closed-type regime, may thus fail to foster the trust-based interactions needed for prisoners to feel safe and secure. As an illustration, Liebling and Arnold (2012) found that factors such as longer sentences and the intensification of risk-oriented practices contributed to declining trust and a fractured prison social environment. Other researchers who looked at felt security, however, found that prisoners may experience a "safety paradox" where they feel safe even in high-risk environments. Wolff and Shi (2009), for example, found that this sense of safety is influenced more by individual factors and the social environment than by formal security measures, including established social networks and recent victimisation experiences.

Further, our finding that perceived support from security staff is a consistent and strong predictor provides a powerful illustration of the importance of felt security (Liebling & Arnold, 2012; Midtlyng, 2022). While formal security is defined by surveillance and physical, technological, and procedural controls (United Nations Office on Drugs and Crime, 2015), felt security arises from prisoners' perceptions of safety and depends on both the environment and the quality of social interactions (Martens & Crewe, 2025; Midtlyng, 2022; Nurse et al., 2003). The positive influence of supportive staff underscores that formal security measures alone are not sufficient and that positive relational dynamics are required for prisoners to feel genuinely safe (Liebling & Arnold, 2012; Midtlyng, 2022).

4.6 The Role of Treatment Staff

Not all forms of staff support operate in the same way across security-related outcomes. It is necessary to take a closer look at the finding that perceived support from treatment staff is a significant predictor of several climate dimensions, including *Drugs and exploitation*, *Prisoner adaptation*, and the *Global security* score, but not of *Prisoner safety* and *Policing and security*. Dewey and Prohaska (2022) explored the perspectives of correctional educators and found that staff view themselves as supportive role models who promote long-term personal development. However, these educators also recognised that the complex issues prisoners face, such as trauma, substance use, and mental illness, a lack of educational or work opportunities and undiagnosed learning disabilities, as well as the coercive prison environment itself, may lie outside their direct influence. This suggests that while treatment staff can help with rehabilitation and a sense of

purpose, their supportive role may be limited in addressing the more immediate security concerns and day-to-day policing typically managed by security staff, which explains our findings.

4.7 Formal vs. Dynamic Security

The findings invite a reconsideration of how security is conceptualised, moving from a purely control-based model toward a relationally grounded understanding of prison governance. In general, our results are in harmony with the broader literature, which suggests that placing an emphasis solely on formal, coercive security can undermine felt security. More precisely, a heavy reliance on formal, coercive security can lead to increased violence and less trust (Liebling & Arnold, 2012; Ricciardelli & Sit, 2016). In the Serbian context, our findings suggest that institutional factors which limit autonomy, such as extended cell lockdowns, negatively impact perceived safety and adaptation, whereas positive relationships with staff improve security-related aspects of the prison climate, as perceived by prisoners. This outcome confirms the need for a balanced approach to security that prioritises both order and a humane, trust-based environment with positive social interactions, commonly referred to as dynamic security (Goossens et al., 2025; Kilmer et al., 2023; Midtlyng, 2022; Santorso, 2021). Since it is based on constructive and respectful staff–prisoner relationships, dynamic security helps prevent misconduct, maintain safety and order, and thereby improve the prison climate (Goossens et al., 2025).

4.8 Practical Implications

Our research holds several practical implications for policy and practice. The results indicate that a sense of security for prisoners is achieved not via physical and procedural measures alone but with positive interpersonal relationships as well. These findings support a shift toward a more relationship-focused, dynamic security model. Prison management and policymakers should re-evaluate the reliance on closed-type regimes and minimise extended cell lockdowns since both can negatively impact prisoner well-being and safety perceptions. In addition, for staff, there is a need for training in communication and relationship-building, as well as in proactive addressing of issues, such as informal prison trade and hierarchies, to prevent a breakdown in security.

4.9 Strengths, Limitations, and Future Directions

To the best of our knowledge, no existing research analyses the links between institutional and relational factors and the prison climate in a Southeast European country like Serbia. By providing the first empirical evidence from this underrepresented region, our study directly addresses a geographical bias recognised in prison climate research. In turn, it offers a unique and valuable contribution by identifying the specific factors that should be prioritised to improve prison conditions and promote institutional legitimacy.

However, several limitations of our study should be mentioned. First, data were primarily collected through self-report questionnaires, with the exception of the prison regime, and may be subject to social desirability bias. Moreover, our data provide individual-level evidence of how institutional and relational factors influence climate perceptions in Serbia. Future multilevel analyses could explore unit-level effects or agreement measures. Although a significant percentage of the national population is included in our sample, it is composed solely of male prisoners from four specific prisons, which limits the generalisability of the findings to the entire prison population in Serbia, notably to female prisoners and those in juvenile or open-type institutions. Future studies could use a longitudinal design to address the cross-sectional limitation. Such studies could also benefit from mixed-methods research and be conducted from the perspective of prison staff. Finally, other relevant variables could be considered, such as sentence length or the mental health status of participants.

5 CONCLUSION

This study provides empirical evidence that both institutional and relational factors significantly influence the prison security climate in Serbian correctional facilities. While formal institutional structures such as the prison regime remain influential, the strongest and most consistent predictors of a more favourable climate are relational, particularly perceived support received from staff. These findings stress the primacy of felt security, which is grounded in the quality of human relationships, over models of formal security based principally on control and physical measures.

By presenting evidence from an under-researched Southeast European setting, the study helps to provide a more geographically balanced understanding of prison climate. The results reinforce the argument that sustainable prison safety relies not simply on strict controls but also on trust, fairness, and meaningful interaction. The future evolution of the Serbian penal system may depend on its ability to shift correctional work from reliance on coercive measures toward models centred on relational dynamics.

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