Reward systems in prison

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4 Predictors of Progression in the Dutch Reward System in Prison■

4.1 Introduction

Reward systems in prison (RSPs) are applied in many countries, in different forms. This includes token economies (Gendreau et al., 2014), good-time credit (Johnson & Stageberg, 2014; Steiner & Cain, 2014; 2017) and different status-levels with associated privileges and freedoms (Liebling et al., 1997; Morar et al., 2019). RSPs fit within a broader trend of neoliberal governance, in which the responsibility and accountability for achieving state goals, such as that of behavioural and cognitive reform, is transferred largely to the individual offender (for example, see Bosworth, 2007; Hannah-Moffat, 2001). This activation of individuals manifests in RSPs by conditionally distributing rewards based on 'good' behaviour. This ought to contribute to prison order and safety, and promote behavioural reform (Bosworth and Liebling, 1994; Chapter 2). The effects of RSPs can be impactful for individuals, both during and post-prison. Their behaviour in prison determines the amount of contact they are allowed to have with their loved ones, access to programming, and even their date of (conditional) release. Therefore, it is surprising that research on this topic has been limited; existing research on reward systems in prison is mostly dated and not generalisable (Chapter 3).

Arguably the best-known example of an RSP is the Incentives and Earned Privileges (IEP) scheme, which has been operational in England and Wales for over three decades (Liebling et al., 1997). The Netherlands has adopted a very similar system in 2014 (Chapter 2). Recently, the Dutch government has introduced the Punishment and Protection Act (2021), in which conditional release has been linked to reward status in the Dutch RSP. In the Dutch and English RSPs, prison officers report on incarcerated individuals' behaviour, and (indirectly) determine the allocation of rewards. Both RSPs thus give substantial discretion and power to prison officers in deciding – or influencing the decision – whether reward status should be granted, maintained, or revoked. Reward systems with such sizable and formalised staff discretion are less common in North American prisons (Haggerty & Bucerius, 2021). It is unclear how prison officers decide on granting reward statuses and how their discretionary powers are used in that process. This raises important questions about factors influencing their decisions.

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To what degree do these decisions reflect individuals' behaviour? Do other factors also impact decisions, such as motivation or even the ability to behave well? This contribution aims to answer these questions in relation to the Dutch RSP.

4.1.1 Dutch System of Promotion and Demotion

The Dutch RSP was introduced for all convicted individuals residing in all Dutch prisons in 2014, approximately affecting half of all individuals incarcerated in Dutch prisons. Individuals without reward status (called Basic programme) are provided the minimum legal amount of programming, visitation etc. Individuals with reward status (called Plus programme) can be rewarded with more visits from friends and family, more freedom, and responsibilities in work (e.g., job as a unit cleaner), higher wages, better (vocational) training, as well as out-of-cell activities on weekends and two evenings. Overall, individuals with reward status spend 11 additional hours out of their cells. Rewards can be granted after behaving well for at least six consecutive weeks. 'Good' behaviour is defined as compliance with 10 behavioural norms: taking part in diagnostics and screening upon prison entry, cooperating in work, actively cooperating in developing and carrying out a sentence plan, keeping appointments, following house rules, cooperating in the daily programme, cooperating with urine tests, and cooperating in conversations about oneself and personal problems (State Secretary of Safety and Justice, 2014). Although RSPs focus on rewarding 'good' behaviour, misconduct precludes reward status. Other undesirable behaviour, such as non-compliance with behavioural norms, can also affect reward status. The prison governor, together with prison officers, ultimately decides on individual reward statuses, at least every six weeks.

Today, the Dutch RSP does not formally account for individual differences in reward status allocation. Behaviour ought to be the only predictor of reward status. Up until 2020, individuals who, due to mental health problems or intellectual disability, had difficulty complying with all behavioural norms, could still be granted reward status, provided they were motivated to change (Van Gent, 2013). In 2020, this clause was removed from the system guidelines. Simultaneously, the behavioural norms were simplified to promote better and more consistent staff behaviour assessments (Inspectorate of the Ministry of Justice and Security, 2018).

4.1.2 Reward Status Predictors: Behaviour, Self-Governance Ability and Motivation

The programme theory of the Dutch RSP assumes that rewarding compliance in the present will promote compliance in the future (Chapter 2). This assumption is theoretically rooted in operant conditioning principles, which

posit that positive reinforcement of behaviour (e.g., rewards) will increase its future occurrence (Murphy & Lupfer, 2014). Various issues deserve further attention in relation to the assumptions and workings of the Dutch reward system. First, although behaviour formally is the only predictor of reward status, it is unlikely that all behaviours are detected, let alone consistently interpreted and sanctioned. Some behaviours may be easily observed by staff, such as violent altercations, while other behaviours are more likely to go unnoticed, such as verbally bullying a cellmate. Moreover, some behavioural norms are clearly defined and objectifiable (e.g., producing negative urine tests), while others are more open to interpretation (e.g., cooperating in conversations about oneself and personal problems). Even if detected, staff is unlikely to sanction all rule violations, because this would be inefficient and stand in the way of good relationships between staff and incarcerated individuals (Haggerty & Bucerius, 2021). Instead, staff is more likely to exercise discretion and negotiate order. Assuming a consistent exercise of discretion, it is expected that there is no systematic variation in reward status related to extra-legal factors, such as age and nationality, apart from differences in behaviour.

A second issue is whether incarcerated individuals possess sufficient abilities to manage and monitor a broad range of behaviours, which is demanded by RSPs (Crewe, 2011b; 2022). Based on her qualitative research, Hutton (2017, p. 93) concluded that 'some prisoners may be more capable […] than others' to comply with behavioural demands in the IEP scheme. However, failing to comply results in negative consequences: loss of rewards. Struggling with self-governance is a recognised pain of imprisonment (Crewe, 2011b; Shammas, 2014). This struggle could be partially due to a discrepancy between what is demanded of individuals and their ability to self-govern their behaviour. Self-governance ability can be understood as all personal skills required to initiate, manage, and monitor behaviour. This includes, for instance, understanding the concept of time, impulse control, and planning. Navigating social structures and self-governing behaviour is challenging for citizens in general (Bovens et al., 2017), but particularly for incarcerated individuals. Individuals who experience problems with self-governing behaviour due to impaired executive cognitions, conceptual, practical, and social skills are overrepresented in prisons worldwide (Garciá-Largo et al., 2020; Meijers et al., 2015). In the Netherlands, 30 to 45 percent of incarcerated individuals are estimated to have an intellectual disability (Den Bak et al., 2018; Kaal et al., 2011). Individuals with such impairments in Dutch prisons are found to be less future-oriented compared to their normal functioning counterparts, retract from social life, and experience difficulties filling in forms (e.g., for leave). They also reported engaging in contact with peers and prison officers less frequently, due to distrust or anxiety of not knowing how to respond (Kaal et al., 2011). It may be expected, then, that poor self-governance ability frustrates compliance with the behavioural norms set out in the Dutch RSP and is associated with misconduct. For instance, being on time for appointments requires under-

standing the concept of time and planning skills, whereas developing and carrying out a sentence plan requires self-reflection and self-monitoring. Therefore, we expect to find that self-governance ability will predict behaviour and thus reward status.

A final issue is the assumption that rewarding individuals promotes compliance. The importance of extrinsic motivation is stressed in learning theories about behaviour (Akers & Jennings, 2016; Bandura, 2001;) and in the dominant Risk-Need-Responsivity (RNR) model of criminal justice interventions (Bonta and Andrews, 2007). Motivation, however, is a complex concept. According to Self-Determination Theory, there are two main types of motivation: extrinsic and intrinsic motivation (Ryan & Deci, 2000), which are regarded as the ends of a continuum from the most external drivers of human behaviour (e.g., rewards by third parties), to the most internal motives (e.g., enjoyment of behaviour). The more intrinsically motivating, the stronger the effect generally is on behaviour. Intrinsic motivation can be explained as wanting to engage in a behaviour for the reward of the engagement itself, whereas extrinsic motivation involves engaging in behaviour to obtain rewards or avoid punishment (i.e., externally regulated). Attaching rewards to certain behaviours has been found to undermine pre-existing intrinsic motivation to engage in those behaviours in some cases (Deci et al., 1999; Ryan & Deci, 2000). Although this theory has a long empirical track record outside of criminology, it is seldomly applied as a framework to understand behavioural decisions of individuals in prison (for exceptions, see Van der Kaap-Deeder et al., 2017; 2019). On the one hand, RSPs appeal to extrinsic motivation by rewarding good behaviour. On the other hand, norm compliance may be desirable (and, therefore, a function of intrinsic motivation). This means that both extrinsic motivation and intrinsic motivation may predict behaviour and thus reward status.

4.1.3 Prior Research on Reward Status Predictors

The relationship between the ability to self-govern behaviour and reward status has been left largely unattended in empirical research. Data fragments indicate that some individuals lack the capacity to self-govern their behaviour, comply and thus to obtain reward status (Hutton, 2017). This appears to align with Liebling's (2008) finding that individuals with less educational qualifications were less successful in obtaining rewards in the IEP scheme. Other studies on the IEP scheme have shown that some individuals experience little difficulty living up to the demand of self-governance, whereas others experience a severe psychological pain, influencing their compliant behaviour (Crewe, 2011b; Crewe & Ievins, 2020). Then again, a recent systematic review on RSP effectiveness did identify some North American studies in the 1960s that focused on the use of rewards to primarily promote academic achievement among intellectually low functioning individuals in prison (Chapter 3). These findings imply that behaviour of individuals with

intellectual impairments can very well be responsive to reward systems. Unfortunately, sample sizes in these studies were small, only motivated volunteers were used, and positive behavioural effects were found to wear off after system termination. Effects could be very different in contemporary, large-scale RSPs, which are imposed on entire prison populations. Considering the prevalence of impaired self-governance ability among incarcerated individuals, especially in the Netherlands, it would be an important addition to the literature to have a measurement of self-governance ability to be able to examine how this concept relates to the ability to meet behavioural demands in prison. The current study presents such a self-report instrument and uses it in a large-scale survey study on RSPs in the Netherlands.

Likewise, the role of motivation in obtaining rewards in prison is scarcely researched (Chapter 3). Studies on behavioural prison interventions illustrate that individuals not motivated to complete interventions, drop out more frequently compared to their motivated counterparts (Nunes & Cortoni, 2006; Wormith & Olver, 2002). More specifically, differences have been reported as to what motivates incarcerated individuals. One of Khan's (2022) interviewees expressed that social rewards (e.g., more family visits, telephone credit) were not attractive to him, as he had no social network. Social rewards thus failed to externally motivate him to comply in the IEP scheme. The opposite was also found. Multiple incarcerated mothers described desperately wanting to maintain contact with their children; to them, social rewards were deeply motivating (Booth, 2020). These findings indicate that the degree to which rewards can foster extrinsic motivation to comply is personal and situational. Other qualitative studies on individuals' experiences with the IEP scheme found that individual motivation levels differed, yet that many individuals voiced extrinsic rather than intrinsic motives to comply (Liebling et al., 1997; Crewe, 2011b). Dutch pilot studies indicated that being aware of the possibility that privileges can be revoked, motivated incarcerated individuals with reward status to continue behaving well (De Jong et al., 2015; 2016).

The current study aims to create a better picture on how these individual factors and staff decisions on reward status are related. This is highly relevant, considering the widespread and large-scale application of RSPs, their significant impact on individual lives and a dearth of empirical research on this topic. The following question will therefore be answered: To what extent is reward status predicted by (a) behaviour, (b) self-governance ability, and (c) motivation?

4.2 Methods

4.2.1 Life in Custody Study (LIC)

The current study uses survey data from the Life In Custody (LIC) study (Van Ginneken et al., 2018). The current study used data collected in 2022 in

a selection of nine prisons. This selection was based on prison population, size, and location. Data was collected shortly after Covid-19 restrictions on external access to Dutch prisons were lifted. The dataset contains self-report data on domains of prison climate (e.g., autonomy and peer relationships) and various possible outcomes (e.g., misconduct and wellbeing).

4.2.2 Instrument

The data was collected using the Prison Climate Questionnaire (PCQ; Bosma et al., 2020b). An adapted version of the PCQ (2022) was used. Compared to the original PCQ, the PCQ 2022 additionally contained, inter alia, items on self-governance ability, system procedural legitimacy, behavioural compliance, motivation to comply with behavioural norms and several background characteristics (e.g., history of substance use). An additional change compared to prior LIC data collections was that the survey was anonymised, because it was not necessary to link the survey data to administrative data. As this study set out to measure self-governance ability (including reading skills), clear, simple, and concise wording was used, without altering items' meanings. The Dutch version of the PCQ 2022 was piloted among eight individuals who were incarcerated in one of the nine selected prisons. Four of these individuals were indicated by staff (not diagnosed) as having intellectual disabilities or learning difficulties. These participants evaluated the survey as clear and comprehensible. The survey was available in Dutch and English.

4.2.3 Procedure

Data were collected from March to July 2022, by a team of 10 research assistants (mostly graduate students), overseen by an experienced researcher. Prior to data collection, research assistants were extensively trained in approaching individuals in prison, the use of informed consent, documenting response and entering data in SPSS 27. During data collection, a prison officer navigated the researchers through the prison, guaranteeing their safety and access. The researchers approached each potential participant individually to explain the goal and anonymous nature of the survey and answered any questions on the survey or procedure. Every potential participant was given a small token of appreciation (e.g., a candy bar) and a pen, regardless of their participation. Surveys were generally collected the same or the next day, by again approaching the participants on their units. Throughout data collection, response was monitored per unit (e.g., number of surveys handed out, collected, non-response). Data collection lasted five days in each prison on average.

4.2.4 Sample

In total, 3210 incarcerated individuals were housed in nine male Dutch prisons during data collection. Of these individuals, 260 could not be invited to participate because of language difficulties, severe mental health problems, lack of Dutch or English language proficiency, or being placed in segregation during data collection. Of the 2950 men who were approached to participate, 2209 took part (reasons for non-participation were 'don't want to' and a lack of trust in survey outcomes leading to real changes in prison). The response rate was, therefore, 75 percent. All participants were informed of the purpose of the study and had to consent to taking part. Only 1021 individuals were incarcerated on regular prison regimes and thus participated in the Dutch RSP, which constituted the sample used for our analyses. This sample size was sufficient to conduct logistic regression analyses with our number of independent variables (see Bujang et al., 2018). Of this entirely male sample, 60 percent were born in the Netherlands, 54 percent had previously been incarcerated and 22 percent had served up to 12 months of their current prison sentence, at the time of data collection. Their mean age was 39 (Mdn. = 36).

4.2.5 Measures

Reward status. The dependent variable reward status was measured using one item ('which programme are you in now?'). Answer categories were 'Basic', 'Plus', 'pre-trial detention', 'don't know' or 'not applicable'. This variable was recoded into a dichotomous variable, representing Basic (0) and Plus (1) programme; in this paper referred to as with or without reward status. The answers 'pre-trial detention', 'don't know' and 'not applicable' were coded as missing. During the first days of data collection, we noticed that some individuals were unaware of the programme they were in. To avoid missing data, data on current reward status was additionally gathered by asking prison officers on the unit. All staff kept a detailed and transparent administration of the current programmes of all individuals at their unit (i.e., a whiteboard with red and green colour markers per individual). Reward status was written on the survey by researchers before it was handed out. When discrepancies between answers provided by staff and participants were identified, staff data prevailed.

Behaviour. We used two different measures for the independent variable, behaviour: compliance and misconduct. Compliance was measured using 10 items (e.g., 'I comply with urine tests') ($\alpha = .91$). The 10 items directly translate to the behavioural norms that dictate granting reward status. Response categories ranged from 1 (strongly disagree) to 5 (strongly agree) on a Likert-scale. A mean score was calculated if over half of the items were answered. High scores indicate high degrees of compliance. Misconduct was measured

using seven items targeting verbal and physical violence towards staff and others, property violence or theft and possession of drugs and possession of contraband (e.g., 'how often, in the last two months in this facility, have you… threatened or scolded another incarcerated individual?'). Response categories were 'never', 'once' and 'twice or more often'. This variable was recoded into a dichotomous variable, with response categories 'no misconduct' (never = 0) and 'misconduct' (once, twice, or more often = 1).[1]

Self-Governance Ability. We used the Leiden Self-Governance Ability Scale (LSGAS) to measure self-governance. The LSGAS is a newly constructed self-report scale, derived from theories on cognition, intelligence, and self-government. The LSGAS contains 14 items on self-governance ability (α = .81) (see Appendix C). After omitting heavily cross-loading items or items with factor loadings below 0.4, factor analysis indicated three subscales which made theoretical sense. Conceptual functioning (α = .73) containing three items (e.g., 'I have difficulty reading and understanding short texts (such as street signs or advertisements)'), socio-practical functioning (α = .76) containing seven items (e.g., 'I can make appointments without help from others (such as appointments at the doctor or municipality)') and executive functioning (α = .73) containing four items (e.g., 'sometimes I like to do things that will get me into trouble'). Correlations between the subscales were all between .27 and .43. These subscales were generally in line with contemporary definitions of intellectual disability stressing both adaptive functioning and intelligence (American Psychiatric Association (APA), 2013; Schalock et al., 2013) and existing measures of intellectual disability (e.g., Learning Disability Screening Questionnaire (LDSQ), McKenzie et al., 2012; Screener Intelligence and Learning Disabilities (SCIL) 18+, Nijman et al., 2018). Response categories ranged from 1 (strongly disagree) to 5 (strongly agree) on a Likert-scale. Several items were reversed, so a high score indicated a higher degree of self-governance ability. A mean score was calculated if over half of the items were answered.[2]

Motivation. The independent variable motivation to comply was measured using seven items. Factor loadings indicated the existence of two subscales: intrinsic motivation, containing four items (e.g., 'I try to follow the rules because … it helps keep me safe in this institution') (α = .70) and extrinsic motivation, containing three items (e.g., 'I try to follow the rules

1 Additional analyses with several subtypes of misconduct (e.g., verbal, or physical violence, possession of contraband) did not yield different findings.

2 To assess the validity of the LSGAS, a screener for intelligence and learning disability (SCIL 18+; α = .95) was used alongside the PCQ. The SCIL has been previously used in forensic settings and correlates well with a shortened IQ test (WAIS) (Nijman et al., 2018). Of the participants in this sample, 39 also completed the SCIL 18+. The LSGAS correlated with the SCIL 18+ sum scores (r (39) = .41, p = .01), approaching moderate concurrent validity. That this correlation was not stronger is not surprising, as the LSGAS stresses conceptual and socio-practical functioning more than the SCIL.

because … I feel like I would otherwise be punished') (α = .81). Response categories ranged from 1 (strongly disagree) to 5 (strongly agree) on a Likert-scale. A mean score was calculated if over half of the items were answered. Higher scores on either scale indicated higher levels of extrinsic or intrinsic motivation to comply.

Control variables. Based on their theoretical and empirical relevance, four control variables were included. The natural logarithm of age was included (apart from table 4.5, in which the original variable is reported). Country of birth distinguished between individuals born in the Netherlands or abroad. Time served was included as an ordinal variable with three categories: up to 6 months, between 6 and 12 months and longer than 12 months. Finally, incarceration history reflected whether a person was previously incarcerated (1 = yes).

4.2.6 Analytical Strategy

Analyses were conducted using SPSS 27.0. Appropriate bivariate analyses were used to examine differences between individuals with and without reward status. Binary logistic regression and linear regression were used for multivariate analysis to examine direct effects of independent variables on reward status, and behaviour, to detect possible indirect effects on reward status.

4.3 Results

Among the group of 1021 convicted individuals, 821 individuals had reward status (81 percent) and 190 did not (19 percent) (the reward status of 10 individuals was unknown). Table 4.1 illustrates that individuals with reward status significantly differed from individuals without reward status, in terms of behaviour, self-governance ability, motivation and control variables (except country of birth). Additional bivariate analyses illustrated that measures of reward status, behaviour, self-governance ability and motivation were mostly significantly related (see Table 4.2). We will now go into some of these results, as well as multivariate regression results (Tables 4.3-4.5).

4.3.1 Behaviour

As expected, results illustrated that individuals with reward status (M = 4.11, SD = 0.67) demonstrated significantly higher rates of compliance, compared to individuals without reward status (M = 3.71, SD = 0.78), t (240,65) = -6.22, p = < .001, Hedges g = .70 (see Table 4.1). Furthermore, individuals with reward status reported significantly less misconduct, X^2 (1, N = 924) = 65.21,

p = <. 001). Only misconduct predicted reward status (OR = 0.35, p < .001), in a multivariate model with all independent variables and control variables (see Table 4.3).

4.3.2 Self-Governance Ability

Individuals in both groups also significantly differed on self-governance ability (see Table 4.1). Individuals with reward status (M = 4.08, SD = 0.53) reported significantly higher scores than their non-rewarded counterparts (M = 3.86, SD = 0.54) on the Leiden Self-Governance Ability Scale, t (949) = -4.98, p = < .001, Hedges g = .53. Individuals with reward status also scored significantly higher on each of the subscales (conceptual, socio-practical, and executive functioning). None of these subscales had a significant effect on reward status, in a multivariate model including all independent and control variables (see Table 4.3).

Table 4.1
Differences Between Individuals With and Without Reward Status (N = 1011)

	No Reward Status (N = 190) % / Mn (SD)	Reward status (N = 821) % / Mn (SD)	Difference Hedges g or X^2	N
Behaviour				
Misconduct (yes)	53%	21%	71.74***	924
Compliance (1-5)	3.71 (0.78)	4.11 (0.67)	.70***	958
Self-governance ability				
LSGAS total (1-5)	3.86 (0.54)	4.08 (0.53)	.53***	949
Conceptual functioning (1-5)	4.38 (0.76)	4.50 (0.72)	.73*	925
Socio-practical functioning (1-5)	3.83 (0.73)	4.04 (0.63)	.65***	951
Executive functioning (1-5)	3.56 (0.78)	3.85 (0.75)	.76***	943
Motivation				
Intrinsic motivation (1-5)	3.53 (0.84)	3.80 (0.71)	.73***	897
Extrinsic motivation (1-5)	3.54 (1.02)	3.29 (1.05)	1.04**	897
Control variables				
Age	32 (10.90)	41 (12.48)	12.20***	903
Born in the Netherlands (yes)	68%	65%	0.70	933
Time served				
0-6 months	12%	5%	13.16**	64
6-12 months	21%	20%	.06	201
12+ months	60%	66%	2.45	656
Incarceration history (yes)	73%	57%	17.30***	*919*

*** p ≤ .001, ** p ≤ .01, * p ≤ .05.

Table 4.2
Bivariate Analyses for Reward Status, Behaviour, Self-Governance Ability and Motivation (N = 1011)

	1.	2.	3.	4.	5.	6.	7.	8.
1. Reward status (yes)	1							
2. Misconduct (yes)	*.24***	1						
3. Compliance (1-5)	.22***	-.26***	1					
4. Conceptual functioning (1-5)	.07*	-.07*	.24***	1				
5. Socio-practical functioning (1-5)	.12***	-.14***	.30***	.40***	1			
6. Executive functioning (1-5)	.15***	-.27***	.23***	.43***	.27***	1		
7. Intrinsic motivation (1-5)	.13***	-.18***	.51***	.01**	.18***	.17***	1	
8. Extrinsic motivation (1-5)	-.09**	.16***	.01	.01	.07*	-.13***	.13***	1

Note. Italics represent Odds Ratio between binary variables.
*** p ≤ .001, ** p ≤ .01, * p ≤ .05.

However, executive functioning was a significant predictor of misconduct (OR = 0.43, p < .001); participants with higher scores on the subscale executive functioning were less likely to report misconduct (see Table 4.4). Moreover, conceptual and socio- practical functioning were significant predictors of compliance (respectively B = 0.08, p < .05 and B = 0.16, p < .001); higher scores on conceptual and socio-practical functioning were associated with greater compliance (see Table 4.5). Paired with not finding a significant effect in the full multivariate model (see Table 4.3), the results suggest the existence of several indirect effects of self-governance ability on reward status through both comp and misconduct.

4.3.3 Motivation

The 821 individuals with reward status (M = 3.80, SD = 0.71) demonstrated significantly higher intrinsic motivation to comply with behavioural norms, compared to the 190 individuals without reward status (M = 3.53, SD = 0.84), t (197,12) = -3.63, p = < .001, Hedges g = 0.73 (see Table 4.1). Also, individuals with reward status (M = 3.29, SD = 1.05) demonstrated significantly lower extrinsic motivation to comply, compared to the individuals without reward status (M = 3.54, SD = 1.02), t (958) = 2.73, p = .01, Hedges g = 1.04. Neither motivation type was a significant predictor of reward status in a multivariate model including all independent and control variables (see Table 4.3).

However, both intrinsic motivation (OR = 0.59, p < .001) and extrinsic motivation to comply (OR = 1.39, p < .001) were found to predict misconduct (see Table 4.4); more extrinsic motivation was associated with a higher likelihood of misconduct, and more intrinsic motivation with a lower likelihood. Additionally, intrinsic motivation to comply significantly predicted compliance (B = 0.46, p < .001), whereas extrinsic motivation to comply

did not (see Table 4.5). Paired with not finding a significant effect for either motivation type in the full multivariate model (see Table 4.3), the results suggest an indirect effect of both motivation types on reward status through behaviour.

Table 4.3
Multivariate Analysis of Predictors of Reward Status (N = 1011)

	OR	Sig.	95% CI
Behaviour			
Misconduct (yes)	0.35	***	[0.22-0.56]
Compliance (1-5)	1.38		[0.97-1.98]
Self-governance ability			
Conceptual functioning (1-5)	1.01		[0.71-1.45]
Socio-practical functioning (1-5)	1.12		[0.77-1.63]
Executive functioning (1-5)	0.94		[0.67-1.30]
Motivation			
Intrinsic motivation (1-5)	1.30		[0.93-1.82]
Extrinsic motivation (1-5)	0.83		[0.66-1.03]
Control variables			
Age	5.42	***	[2.46-11.92]
Time served			
0-6 mths	0.40	*	[0.18-0.93]
6-12 mths	*ref*	*ref*	*ref*
12+ mths	1.52		[0.92-2.53]
Country of birth (the Netherlands)	0.80		[0.48-1.32]
Incarceration history (yes)	0.59	*	[0.37-0.94]
Constant	0.25	*	

Note. Nagelkerke $R^2 = 0.24$

*** p ≤ .001, ** p ≤ .01, * p ≤ .05.

Table 4.4
Multivariate Analysis of Predictors of Misconduct (N = 1011)

	OR	Sig.	95% CI
Self-governance ability			
Conceptual functioning (1-5)	1.27		[0.94-1.72]
Socio-practical functioning (1-5)	0.88		[0.64-1.21]
Executive functioning (1-5)	0.43	***	[0.32-0.57]
Motivation			
Intrinsic motivation (1-5)	0.59	***	[0.46-0.77]
Extrinsic motivation (1-5)	1.39	***	[1.15-1.68]
Control variables			
Age	0.26		[0.14-0.51]
Time served			
0-6 mths	0.59		[0.23-1.50]
6-12 mths	*ref*	*ref*	*ref*
12+ mths	1.41		[0.90-2.22]
Country of birth (the Netherlands)	0.87		[0.58-1.32]
Incarceration history (yes)	2.06	***	[1.40-3.05]
Constant	21.96	*	

Note. Nagelkerke $R^2 = 0.24$

*** p ≤ .001, ** p ≤ .01, * p ≤ .05.

Table 4.5
Multivariate Analysis of Predictors of Compliance (N = 1011)

	Beta	B	Sig	95% CI
Self-governance ability				
Conceptual functioning (1-5)	0.08	0.08	*	[0.01-0.16]
Socio-practical functioning (1-5)	0.14	0.16	***	[0.08-0.23]
Executive functioning (1-5)	0.06	0.06		[-0.01-0.12]
Motivation				
Intrinsic motivation (1-5)	0.46	0.46	***	[0.37-0.49]
Extrinsic motivation (1-5)	-0.05	-0.03		[-0.07-0.01]
Control variables				
Age	-0.03	0.00		[-0.00-0.00]
Time served				
0-6 mths	-0.07	-0.21	*	[-0.41--0.01]
6-12 mths	*ref*	*ref*	*ref*	*ref*
12+ mths	0.02	0.03		[-0.07-0.13]
Country of birth (the Netherlands)	0.03	0.04		[-0.05-0.14]
Incarceration history (yes)	-0.05	-0.08		[-0.16-0.01]
Constant		0.14		[-0.06-0.33]

Note. Adjusted R2 = 0.30

*** p ≤ .001, ≤ .01, * p ≤ .05

4.4 Conclusion and Discussion

Little prior empirical research existed on reward systems in prison (RSPs), despite their widespread use. As a first step towards better understanding how RSPs operate, this exploratory study set out to answer the research question 'To what extent is reward status predicted by (a) behaviour, (b) self-governance ability, and (c) motivation?' While we identified significant bivariate relationships between each of these variables and reward status, only misconduct was a significant predictor of reward status, after controlling for other variables. This finding can partially be explained by indirect effects of self-governance ability and motivation on reward status, through compliance and misconduct. We will elaborate on the interpretation and implications of the findings for each of the independent variables (behaviour, self-governance ability and motivation) below.

First, the Dutch RSP is effective in distinguishing between those who report to behave in line with prison rules and those who do not (Chapter 2). Individuals with reward status (81 percent of our sample) not only reported less 'bad' behaviour (misconduct), but also more 'good' behaviour (compliance), compared to their non-rewarded counterparts. In a model with behaviour, self-governance ability, motivation and control variables, the only significant predictor of reward status was misconduct. This can partially be explained through possible indirect effects of self-governance ability and motivation on reward status through compliance, which we will turn to in a moment. One explanation for the significant effect of misconduct on reward status is the obligation laid down in Dutch law to respond to misconduct with revoking reward status. Relatedly, prison officers may generally be focused on possible threats to order and safety (i.e., misconduct), rather than on compliance. They may also be guided more by the clearest behavioural norms in reward status allocation decision-making. Whereas misconduct is well-specified in policy guidelines, the criteria for compliance are less specific. Unclear criteria may cause ambivalence and reluctance among staff in behaviour observation, interpretation, and reward status allocation. Experts therefore generally recommend defining behavioural norms precisely and unambiguously (Gendreau et al., 2014). While misconduct surfaced as the sole predictor of reward status, many other personal characteristics were related to misconduct, which explains why there were multiple notable differences between individuals with and without reward status. Rewarded individuals were older, had served more time in prison and were less likely to have an incarceration history. This is in line with most prior research on correlates of misconduct (Steiner et al., 2014).

Second, individuals with reward status reported higher levels of self-governance ability (conceptual, socio-practical, and executive functioning) than non-rewarded individuals, as expected. Yet none of the self-governance subscales significantly predicted reward status in a model with all other variables. Indirect effects on reward status, however, possibly run through

compliance, as both socio-practical and conceptual functioning predicted compliance – but executive functioning did not. The non-significant effect of executive functioning on compliance could be explained by a hierarchy among subscales, as there is scholarly consensus that ('higher') executive functions enable the use of ('lower') conceptual, social, and practical skills (e.g., Suchy et al., 2017). In contrast, executive functioning significantly predicted misconduct. This could be an artefact of the operationalization of executive functioning because some of its items are explicitly linked to misconduct. In short, this study's findings indicate that individuals with lower self-governance ability struggle with compliance and are therefore less likely to obtain reward status. Our results do not show evidence that self-governance ability is considered in decisions on reward status.

Third, extrinsic and intrinsic motivation to comply were both associated with reward status, but in contrasting ways. Higher levels of intrinsic motivation and lower levels of extrinsic motivation were associated with (increased likelihood of) being rewarded. Neither motivation type was a direct significant predictor of reward status in a full regression model. However, we did find that intrinsic motivation was a significant predictor of compliance and thus possibly indirectly relates to reward status. Pointing in the same direction is a strong bivariate relationship between compliance and intrinsic motivation (r = .51, p = <. 001). These findings align with our expectations based on self-determination theory and empirical work suggesting that intrinsic motivation is most effective in behaviour initiation and maintenance (Deci et al., 1999; Ryan and Deci, 2000). A predictive effect of extrinsic motivation on compliance was not found. These findings raise interesting questions about the effectiveness of rewards as external motivators of compliance. One interpretation is that these findings contradict the assumption that external rewards will increase future compliance. This reading is strengthened by bivariate analyses indicating that extrinsic motivation to comply was related to an increase in misconduct. However, there are insufficient grounds for generalisation. It is possible that other personal and situational factors may also account for the non-significant effect of extrinsic motivation on reward status, such as individual differences in reward preferences (Booth; 2020; Khan, 2022), or the six-week interval between exhibiting good behaviour and obtaining rewards, which may be too long (e.g., Pierce et al., 1972; Stanger et al., 2013). Future research on how RSPs operate is therefore advised to also evaluate system components separately, such as reward attractiveness and behaviour-rewarding interval.

4.4.1 Limitations and future research

Some remarks on this study's methodology and findings are in place. First, an important novel contribution of our study is the conceptualisation and measurement of self-governance ability, using a new self-report instrument: the Leiden Self-Governance Ability Scale. This self-report instrument is

grounded in relevant theory, is reliable and is suitable for large scale application in prison research. Our pilot and cross-validation with a screener for intellectual disability indicated that individuals with impaired intellectual abilities were able to understand and complete our brief self-report instrument, and that the scores on both instruments were correlated. Further research is necessary to determine the exact psychometric qualities of this instrument, and to see if the findings can be replicated in other prison contexts. Specific attention should be given to examining social desirability bias, given that prior studies have indicated that this bias is prevalent among individuals with impaired self-governance abilities in the Dutch criminal justice system (Rassin and Candel 2010). Overall high mean scores on self-governance reported in this study may be reflective of this bias. With growing attention to the difficulties of self-governance among offenders, further developing this instrument could have valuable applications in quantitative prison research.

Second, this study did not capture the reward status allocation process from a prison officer perspective. It is unknown how the observation and interpretation of behaviour by staff relate to reward status allocation. Staff are likely to report (and ignore) behaviour strategically to maintain good relationships (Haggerty & Bucerius, 2021), which also affects individuals' reward status. Future research should explore decision-making on reward status allocation, to help interpret and contextualise the current findings.

Third, our data did not capture any social learning element other than positive reinforcement. However, it is likely that there are other factors at play in behaviour initiation and maintenance in a social environment, such as differential association, imitation, and modelling (Akers & Jennings, 2016; Bandura, 2001), which were captured by our questionnaire. Future studies should attend to the social learning environment in reward systems in prison, not least because the IEP scheme was found to foster individualism and reshape social interactions (Crewe, 2022). Since RSP characteristics (e.g., design, implementation) can differ substantially, it would be worthwhile to replicate this study in other prison systems.

In conclusion, this study shed a first light on how individual factors and staff decisions on reward status are related. The Dutch RSP was found to disadvantage individuals with poor self-governance ability, as they are less likely to be compliant and possibly to be rewarded. Even though effect sizes found in this study could be perceived as small to medium by traditional standards, their (cumulative) impact on micro and meso level can be profound (Funder & Ozer, 2019). For instance, being denied rewards will frustrate conditional release and limits the options of maintaining social ties during imprisonment, possibly negatively affecting post-release desistance from crime. Therefore, we recommend staff to take behavioural non-compliance as a starting point for further inquiry into underlying causes, such as frustration of motivation and impaired ability to self-govern daily life and perceive those causes as treatment needs.

Appendix C

Table C1

Items of the Leiden Self-Governance Ability Scale (LSGAS)

1. I can use arguments to explain to someone why I want (to do) something
2. I can make appointments without help from others (such as appointments at the doctor or municipality)
3. I follow the news (for example through the newspaper, radio or television)
4. It is easy for me to write a short text (such as a grocery list)
5. I can easily make new friends
6. It is easy for me to plan and use public transport (for example travelling by bus and train)
7. I always keep my cell clean and organised
8. Sometimes I like to do things that will get me into trouble (reversed)
9. I am easily distracted (reversed)
10. I have difficulty quitting bad habits (reversed)
11. If something unexpected happens, I get easily upset (reversed)
12. I have difficulty telling time (reversed)
13. I have difficulty reading and understanding short texts (such as street signs or advertisements) (reversed)
14. I find math difficult (reversed)

Note. Component 1: Conceptual functioning (items 12, 13, 14); Component 2: Socio-practical functioning (items 1, 2, 3, 4, 5, 6, 7); Component 3: Executive functioning (items 8, 9, 10, 11)

Table C2

Inter-Item and Item-Total Correlations of the Leiden Self-Governance Ability Scale (LSGAS)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Total
1	1	.46***	.35***	.38***	.34***	.32***	.31***	.09***	.09***	.10***	.15***	.27***	.28***	.22***	.58***
2		1	.37***	.30***	.24***	.33***	.34***	.19***	.13***	.18***	.16***	.28***	.32***	.24***	.61***
3			1	.33***	.27***	.24***	.42***	.19***	.17***	.12***	.12***	.23***	.22***	.23***	.56***
4				1	.29***	.29***	.27***	.07*	.08*	.11***	.13***	.19***	.17***	.17***	.51***
5					1	.25***	.23***	.07*	.15***	.14***	.12***	.11***	.15***	.11***	.46***
6						1	.23***	.08*	.12***	.07*	.09**	.15***	.18***	.17***	.50***
7							1	.24***	.19***	.22***	.16***	.25***	.25***	.20***	.55**
8								1	.33***	.45***	.24***	.28***	.28***	.30***	.51***
9									1	.48***	.47***	.21***	.22***	.32***	.53***
10										1	.42***	.22***	.19***	.24***	.52***
11											1	.27***	.23***	.29***	.51***
12												1	.55***	.42***	.57***
13													1	.47***	.58***
14														1	.57***

*** p ≤ .001, ** p ≤ .01, * p ≤ .05