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Is More Always Better? A Look at Visitation and Recidivism

by

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Abstract

The body of literature on prison visitation provides empirical support that visitation may influence the likelihood of recidivism. However, the literature is limited in both size and geographic representation, as more than half of studies originate from samples in Florida or Minnesota. Moreover, inconsistency in the use of measures further complicates generalizability of the findings. The following study utilizes data collected from the Oregon Criminal Justice Commission to examine the relationship between visitation and recidivism in Oregon. Using a sample of 29,312 adults in custody (AICs) who were released between 2011 and 2017, we test the associations of seven distinct metrics of visitation and recidivism, using rearrest. Additionally, we explore which of these metrics has the greatest association with the likelihood of rearrest. The results of the binary logistic regressions found all seven metrics were statistically significant in decreasing the odds of being rearrested ($p < .001$). Moreover, the findings of the analyses suggested the number of distinct people who visit had the most statistically significant, negative association with the likelihood of being rearrested. Implications of this study stress the need to reduce the barriers to prison visitation to facilitate successful reintegration.

Dedication

I would like to dedicate this work to my parents and my sisters for believing in me, and for giving me the motivation to keep going. I couldn't have done this without you.

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Introduction

The high-financial costs (Christian, 2005; Duwe & Clark, 2013; Pierce, 2015; Tewksbury & DeMichele, 2005) and community risk associated with recidivism justify the need for additional research to promote successful reentry for adults in custody (AICs) who are transitioning back into society. Research indicates the maintenance of social ties during incarceration promotes desistance from criminal behavior and positive community reintegration (Acevedo & Bakken, 2001; Anderson et al., 2020; Atkin-Plunk & Armstrong, 2018; Austin & Hardyman, 2004; Bales & Mears, 2008; Barrick et al., 2014; Berg & Huebner, 2011; Cobbina et al., 2012; Cochran, 2012, 2014; Cochran et al., 2017, 2020; De Claire & Dixon, 2017; Duwe & Clark, 2012, 2013; Duwe & Johnson, 2016; Duwe & McNeeley, 2020; Hairston, 1991; Lafferty et al., 2015; Lee, 2019; Liu et al., 2016; McNeeley & Duwe, 2020; Mears et al., 2012; Meyers et al., 2017; Mitchell et al., 2016; Mowen et al., 2019; Naser & La Vigne, 2006; Pierce, 2015; Wolff & Draine, 2004). Specifically, there is a growing body of literature that finds prison visitation reduces the likelihood of recidivism (Atkin-Plunk & Armstrong, 2018; Bales & Mears, 2008; Cochran, 2014; Cochran et al., 2020; Duwe & Clark, 2013; Duwe & Johnson, 2016; Duwe & McNeeley, 2020; Lee, 2019; McNeeley & Duwe, 2020; Mears et al., 2012). Empirical support, however, is limited by the inconsistent use of four to five different visitation measures across varying studies (i.e., number of visitors instead of visits, as there can be multiple visitors per visit; the number of visits instead of visits by a specific person, or visits by different people). Additionally, eight of the ten studies that explore the impact of visitation on recidivism utilize samples in Florida and Minnesota,

potentially limiting generalizability of the findings. Therefore, more research is needed to understand the mechanism in which visitation may help to disrupt the cycle of recidivism.

Background

High Recidivism Rates

Research on reentry found 95% of AICs are eventually returned to the community (Hughes & Wilson, 2003). For individuals returning to their communities after being incarcerated, the reentry process can involve several challenges. The obstacles include being deemed generally unemployable – with limited employment opportunities for formerly incarcerated people, fewer job skills, and/or a poor work history due to being in custody – limited access to housing, loss of positive social ties in the community, and potentially strained family relationships (Barrick et al., 2014; Pierce, 2015).

Analyses on recidivism have found 67-68% of AICs released from custody will recidivate (Alper, 2018; Langan & Levin, 2002). That is, for every 10 individuals released, six are estimated to recidivate in less than three years. A five-year follow-up report from the Bureau of Justice Statistics examining the outcomes of AICs released in 2012 across 34 states in the United States found a majority of formerly incarcerated people recidivate within a few years of reentry. Similar to the previously stated rates, the researchers noted within three years of their release, 62% of AICs were rearrested – 71% were rearrested within 5 years (Durose & Antenangeli, 2021). Looking at the 608,026 people released across the United States in 2019 (Carson, & Mulako-Wangota, 2019), we estimate over 376,976 individuals will be rearrested by 2022, and over 431,698 by 2024. While the sheer number provides an idea of the prevalence of repeat offending, it is worth

noting the consequences of criminal behavior may extend beyond the individual themselves, creating an impact on the communities of the offenders, and the correctional facilities utilized to house them.

Costs of Imprisonment and De-carceration

In 2019 alone there were 1,430,800 individuals being held across the United States prisons system – a 2% drop from 2018. Although the prison population has declined over the past five years (Bureau of Justice Statistics, 2020), there is a substantial financial cost associated with housing over 1 million individuals in correctional systems. For each AIC, it is estimated the associated cost is $37,449 per year (Bureau of Prisons, 2019) – a cost over 1.5 times greater than the average yearly cost of a 4-year, public undergraduate education in the United States for the 2018–2019 academic year (Digest of Education Statistics, 2020). Furthermore, a report from the United States Sentencing Commission on federal recidivism rates in 2005 found 24.6% of individuals released were eventually reincarcerated after eight years (Hunt & Dumville, 2016). This is an estimated cost of *at least* 5.6 *billion* dollars to re-house less than a quarter of the 608,026 people released in 2019 (149,574) over the next eight years. Moreover, this estimation solely considers the cost of an incarceration period of one year per person.

In addition to the financial cost placed on correctional facilities, there are also burdens placed on the community, friends, and family of AICs. Studies report the costs of imprisonment include loss of neighborhood stability, relationship strain, parental distress, financial stress, stigmatization, and negative effects on the well-being of the loved ones of AICs (see Beckmeyer & Arditti, 2014; Hairston, 1991; Wolff & Draine, 2004). For

those closest to an AIC, life is disrupted – relationships may become strained due to infrequent contact, and many families express worry for the well-being of the individual being housed in a facility (Beckmeyer & Arditti, 2014; Christian, 2005). Incarceration may also incur financial burdens for those ties, such as the loss of a co-parent and financial contributions, and finding resources to pay for the cost of visiting and maintaining the relationship (Christian, 2005; Tewksbury & DeMichele, 2005).

Furthermore, emotional strain may be placed on the visitors to maintain a positive attitude as a sign of hope for AICs (Christian, 2005). Comfort (2003) noted friends and family can also face secondary stigmatization during the visitation process, in which visitors report being treated akin to a "criminal" based on the highly-restrictive environment and oversight (as cited in Christian, 2005; see Sitren et al., 2020, p. 4). Children may also suffer from emotional stress due to the initial separation, and/or the experience of the visitation process (i.e., restrictions of movement, visitation setting), which may deter future visitation (Beckmeyer & Arditti, 2014; La Vigne et al., 2005). Additionally, children with at least once incarcerated parent have an increased risk of future criminal behavior (see Pierce, 2015, p. 371; see Wolff & Draine, 2004, p. 470).

Although the high financial and social costs associated with corrections may de-emphasize the use of correctional facilities, there are possible risks associated with de-carceration – recidivism. Given the variability in the outcomes of AICs in their reintegration into society, studies have turned their attention on the reentry experience to better understand this transition (Anderson et al., 2020; Atkin-Plunk & Armstrong, 2018; Austin & Hardyman, 2004; Bae, 2016; Bales & Mears, 2008; Barrick et al., 2014; Boudin

et al., 2013; Cochran, 2014; Duwe & Clark, 2012; Hairston, 2002). Notably, studies suggest post-release success is influenced by dynamic factors during incarceration (see Atkin-Plunk & Armstrong, 2018; see Duwe & Clark, 2017). In fact, studies indicate post-release criminal behavior may be the consequence of the "prisonization" process (see, generally, Anderson et al., 2020; Duwe & Clark, 2017). Prisonization theorizes periods of incarceration may increase the risk of recidivism by increasing the presence of factors that add stress to the coping process. These risk factors include social isolation (i.e., separation from relationships and social bonds, as a form of social control), learned maladaptive behaviors to cope with stress of imprisonment and instability, and transitions from rigid routines within the confines of the prison to a lack of routine following release (Anderson et al., 2020; Atkin-Plunk & Armstrong, 2018; Vieraitis et al., 2007). Additionally, uncertainties of housing, employment, and family reunification following release may create strain on social relationships (Brunton-Smith & McCarthy, 2016; Cochran et al., 2016). Subsequently, these weakened social ties may potentially result in formerly incarcerated individuals returning to criminal behavior as a means of supporting themselves (see Berg & Huebner, 2011; see Bosker et al., 2013). Therefore, a critical point in combatting stress and concerns over reintegration may be at the end of the prison sentence (Adams, 1992, p. 347).

Visitation Facilitates Reintegration

While the search for employment, housing, and social support each present a trial in and of itself, some researchers suggest post-release social ties may have a hand in finding employment and housing (Austin & Hardyman, 2004; Berg & Huebner, 2011).

Such that, studies determined the maintenance of healthy relationships, in addition to the diversification of this support, was linked to an increase in available opportunities for housing and employment (Wolff & Draine, 2004). This was, in turn, negatively associated with a risk in recidivism (see Duwe & Clark, 2013).

In addition to employment opportunities and financial support, studies report AICs had post-release expectations of emotional support, and assistance with stigmatization through their families (Anderson et al., 2020; Berg & Huebner, 2011). One of the earliest reviews of the literature suggested visitation improved the mental health of both AICs and their family members, while increasing the likelihood of reunification (Hairston, 1991). Despite limitations of the prior research, a meta-analysis from 2017 concluded visitation is associated to a reduction in depressive symptoms for specific prison populations (De Claire & Dixon, 2017). Moreover, more recent studies emphasize the potential for visitation to improve optimism for reentry (Anderson et al., 2020; Liu et al., 2016). Looking at previous studies, Duwe and Clark (2012) estimated 40 – 80% of newly released individuals rely on their families immediately after release (p. 46). That is, these ties may function as a source of social capital for AICs to rely on after release.

Generally, social capital refers to the resources and opportunities made available from the ties in a social network, of which social support is a facet (Anderson et al., 2020; Liu et al., 2016). Within the context of corrections, these resources can include expectations of support during and after incarceration (Anderson et al., 2020; Mancini et al., 2016). Given this, research has examined the effects of social capital to buffer the deleterious effects of these risk factors and bolster successful reentry (Anderson et al.,

2020; Cochran et al., 2020). For example, findings from multiple studies imply friends and family have the potential to alleviate pains of social isolation and separation associated during imprisonment (Anderson et al., 2020; Liu et al., 2016). Namely, these relationships provide emotional support throughout the pre- and post-release process (Barrick et al., 2014)

Because of the utility of social ties to provide social support and capital both during and after incarceration, researchers stress the importance of maintaining these relationships throughout custody (Atkin-Plunk & Armstrong, 2018; McNeeley & Duwe, 2020). Although, one study in Iowa suggests new relationships may be most beneficial in providing post-release support (Lee, 2019) – as some studies caution the continued influence of criminal associates (briefly, Barrick et al., 2014; see Cochran & Mears, 2013, p. 255). Despite this, the literature has presented numerous findings that visits from prosocial relationships may mitigate the influence of maladaptive behaviors while incarcerated (Anderson et al., 2020; Cochran, 2012). Thus, researchers advocate for correctional facilities to increase the availability of social ties – (e.g., visitors) to the outside world (See Atkin-Plunk & Armstrong, 2018, p. 1508; Cochran, 2014, p. 202).

Visitation allows the upkeep of relationships and connection to the outside world, as well as the availability and accessibility to social capital (Anderson et al., 2020; Cochran et al., 2020). In fact, one meta-analysis has found it is well-documented that visitation is associated with a reduction in recidivism (Mitchell et al., 2016). Indeed, prison visitation studies demonstrated a reduction in rearrest between 10–30% for AICs

who received visits in comparison to those who did not (Mears et al., 2012; Mitchell et al., 2016).

Although having been visited is important, additional measures have also shown to be relevant considerations in determining the mechanisms of visitation. Studies have found with each additional visit, the likelihood of recidivism decreases (Duwe & Clark, 2013; Mears et al., 2012). Moreover, there is a growing body of literature on the buffering effects of visits from specific individuals within the visitation network. Particularly, visits from romantic partners, spouses, siblings, mothers, fathers, friends, in-laws, other relatives, mentors, clergy, and community volunteers are associated with a reduction in the likelihood of recidivating (Atkin-Plunk & Armstrong, 2018; Bales & Mears, 2008; Duwe & Clark, 2012, 2013; Duwe & Johnson, 2016; Mears et al., 2012). The diversity of the social ties in the visitation network might also be crucial to understanding the effects of visits (e.g., Duwe & Johnson, 2016). Another important aspect of visitation may include the timing of these visits during the period of incarceration (see Bales & Mears, 2008; see Cochran, 2014).

Important to note, however, the literature is limited on the use of standard measures of visitation, in addition to a conclusion for which of these measures may lend the greatest insight into the effect of visitation on recidivism. Furthermore, the generalizability of many of the studies may be limited to the few states from which the data were obtained (Austin & Hardyman, 2004; Boudin et al., 2013; McNeeley & Duwe, 2020). Nevertheless, the prison visitation literature demonstrates the importance of

visitation as a platform for the continuation and creation of social ties in promoting successful reentry (see Mears et al., 2012), justifying further exploration.

The Current Study – Research Questions and Hypotheses

Despite the empirical support, the prison visitation literature on recidivism is limited in size, geographic representation – with eight of the 10 visitation studies being conducted in Florida and Minnesota – and sophistication of visitation measures. The current study seeks to address some of the limitations of this literature using a large sample of AICs incarcerated in Oregon between 2011 and 2017 (n = 29,312). Using binary logistic regressions, this research includes more comprehensive measures of visitation to measure the outcome of post-release rearrest. The current research analyzes the number of visits, number of visitors, distinct people who visited, the number of distinct relationships within the visitation network, the isolated effects of these distinct relationships, and the timing of the visitors. Additionally, we test for the measure most associated with post-release reoffending. Thus, the nine research questions of this research are as follows:

RQ_1: How many AICs receive visits?

Prior research yields varied findings regarding the proportion of AICs who were visited while incarcerated in state correctional facilities. Bales and Mears (2008) conducted one of the earliest studies using a sample of AICs from Florida (N = 7,000). They found 42% of their sample received at least one visit. Mears and colleagues (2012) reported 24% of AICs in their sample from Florida (N = 3,903) were visited while incarcerated. Duwe and Clark (2013) obtained data on a large sample from Minnesota (N

= 16,420) and 61% of the AICs were visited at least one time. Cochran and colleagues (2016; 2020) report visitation rates of 26% and 23.4%, respectively, from samples from Florida (*N* = 34,941; *N* =16,289). Finally, Atkin-Plunk and Armstrong (2018) found 51% of the AICs in their sample from five southern correctional facilities (*N* = 205) were visited. The wide range observed in visitation rates across these studies may be attributable to one or more factors. First, a state's correctional facilities regarding visitation may make it easier or more difficult for people to visit an AIC (see Austin & Hardyman, 2004, p. 22; Boudin et al., 2013; see Duwe & McNeeley, 2020, p. 575). Second, the geographic distributions within a state may impact whether AICs receive a visit. For example, some states place prisons far away from population centers making it difficult for family and friends to travel to these locations. Third, some of the variability across the studies may be attributable to general trends in visitation over time. Fourth, several studies were based on small sample sizes, limiting the generalizability of the findings. Whatever the reason for this variability, there is a need for additional research on this topic with newer samples from other states.

RQ_2: Are AICs who are visited less likely to recidivate than AICs who are not visited?

Turning to the potential effects of visitation on positive reintegration, two studies found there was no association between receiving a visit while incarcerated and subsequent recidivism (Cochran et al., 2020; Lee, 2019). Moreover, a meta-analysis resulted in inconclusive findings for family visits in particular (De Claire & Dixon, 2017). However, seven studies found visits reduced the likelihood of recidivism, with reductions ranging from 3 to 49% (Atkin-Plunk & Armstrong, 2018; Bales & Mears,

2008; Cochran, 2014; Duwe & Clark, 2013; Duwe & Johnson, 2016; Duwe & McNeeley, 2020; Mears et al., 2012). Additionally, a separate meta-analysis concluded that general visitation significantly reduced the likelihood of recidivism, with 12 of the 15 studies finding significant results (Mitchell et al., 2016). One explanation for the varying findings could be the size of this body of research, with roughly ten studies delving into the relationship between visitation and recidivism. Another could be the limited geographic representation of the literature, as eight of the 10 studies focusing on recidivism were in either Minnesota or Florida. Based on prevailing findings in the literature, we expect to see AICs who are visited are less likely to recidivate than AICs who were not visited.

RQ_3: Are AICs with a greater number of visits less likely to recidivate than AICs who receive fewer visits?

Starting with the first continuous measure of prison visitation and the potential effect on reentry, the third research question examined the number of visits and the likelihood of being rearrested. Several researchers within the prison visitation literature include the total number of visits to measure frequency of the visitation (Atkin-Plunk & Armstrong, 2018; Bales & Mears, 2008; Cochran, 2014; Cochran et al., 2020; Duwe & Clark, 2013; Duwe & Johnson, 2016; Duwe & McNeeley, 2020; Lee, 2019; McNeeley & Duwe, 2020; Mears et al., 2012). Two of the studies found inconsistent or no association between visits and recidivism (Cochran et al., 2020; Lee, 2019). On the other hand, for seven of the studies that looked at recidivism, increases in the number of visits resulted in additional decreases in the likelihood of recidivism (Bales & Mears, 2008; Cochran,

2014; Duwe & Clark, 2013; Duwe & Johnson, 2016; Duwe & McNeeley, 2020; McNeeley & Duwe, 2020; Mears et al., 2012). Specifically, Bales and Mears (2008) suggest the odds of recidivating were reduced 3.8% for each additional visit. For their sample, Duwe and Clark (2013) saw starting with a 13-25% reduction, a greater number of visits were associated with a greater decrease in the risk of recidivism. Moreover, one Florida study that looked at the patterns of visitation report that although recidivism tapers off after the second initial visit, additional visits still accumulate marginal reductions (Mears et al., 2012, p. 908). Given this, we hypothesize AICs with a greater number of visits will be less likely to recidivate than AICs with fewer visits.

RQ_4: Are AICs with a greater number of visitors less likely to recidivate than AICs with fewer visitors?

Where the number of visits may measure one facet of the frequency of visitation, the number of visitors presents another. For example, a visit can consist of multiple visitors. Specifically, a visit by one visitor may have a differential effect by a visit with five visitors, or even twenty visitors. Two studies considered the number of visitors when measuring visitation (Duwe & Clark, 2013; Duwe & Johnson, 2016). However, neither of the studies examined the direct relationship between the number of visitors and the likelihood of recidivism. Therefore, due to limited research on *visitors*, rather than *visits*, an empirically-informed hypothesis is also limited.

RQ_5: Are AICs with a greater number of distinct people who visited less likely to recidivate than AICs with fewer distinct people who visited?

Because the number of visitors might not provide a comprehensive look at the breadth of the visitation network, we also looked at the number of distinct visitors. For example, an AIC may have 20 visitors. However, there may be a difference in post-release outcomes for AICs with 20 visits by one visitor versus five visits from four distinct visitors. That is, the fifth research question asks whether the number of distinct people who visited is important. The CJC provides each visitor with their own unique identification number. This data facilitated analyses of the number of visits made by each distinct visitor. This allowed us to establish the number of people within the visitation network. Within the body of research on the effects of visitation on recidivism, only one study looked at the number of distinct people who visited. In their sample, Duwe and Johnson (2016) determined the risk of recidivism was significantly reduced for AICs with a greater number of individual visitors. Based on the limited empirical findings, no hypothesis was made.

RQ_6: Are AICs who have access to a greater number of distinct relationships less likely to recidivate than AICs who have access to fewer distinct relationships?

Delving further into the various aspects of visitation, testing for the number of distinct relationships informs the diversity of an AICs visitation network, another potential mechanism behind the effects of visitation on recidivism. In other words, one visit from a spouse, a visit from a friend, and another visit from a parent may have a different effect than three separate visits from three individual friends. In fact, one

Minnesota study found as the number of unique visitors (defined by the relationship type) increased, the likelihood of recidivism decreased. Interestingly, the researchers found the total number of visitors did not significantly explain this negative association (Duwe & Clark, 2013). Hence, the diversity in the types of relationships available to an AIC may provide insight into visitation as a mechanism of reducing the likelihood of re-offending. Due to the limited findings on the relationship between the number of distinct relationships and recidivism, no hypothesis was made.

RQ_7: Which distinct relationship has the strongest association with reducing the likelihood of recidivism?

Looking at the distinct relationships, we examine which of the relationships might have the greatest effect on reducing the likelihood of recidivism. Research finds that having been visited by a spouse, significant other, father, friend, other relative, or clergy reduce the likelihood of recidivism (Atkin-Plunk & Armstrong, 2018; Bales & Mears, 2008; Duwe & Clark, 2013; Duwe & Johnson, 2016; Mears et al., 2012), with several of the studies finding the most important visitor relationship being a spouse, or significant other/romantic partner(Atkin-Plunk & Armstrong, 2018; Bales & Mears, 2008; Mears et al., 2012). Notably, however, only one study explored the potential for the number of visits by relationship type and the influence on post-release outcomes. Duwe and Clark (2013) reported visits from clergy, siblings, fathers, mentors, and other relatives were all associated with a decrease in recidivism. Visits by in-laws were the most consistently significant across varying measures of visitation and recidivism (ranging from 1.8-2.1% per additional visit). Based on prior finding of the literature, we predict AICs who receive

visits by a spouse are less likely to recidivate than AICs who do not receive visits from a spouse.

RQ_8: Are AICs who receive visits closer to release less likely to recidivate than AICs who receive visits earlier in their incarceration?

Next, to account for the varying sentence lengths of the large sample, the current research considers when the visits occur and the effect on post-release outcomes. Five studies considered the timing of visits on the outcome of recidivism (Bales & Mears, 2008; Cochran, 2014; Duwe & Clark, 2013; Duwe & Johnson, 2016; Lee, 2019). Delving into when visits occur, Cochran (2014) suggested visitation occurs within four, distinct typologies: early visits (visits at the initial start of the sentence), later visits (visits occurring at closer to the time of release), consistent visits (sustained visitation throughout the index incarceration), and never being visited. Per this study, of the typologies established, visits experienced earlier during the sentence were the most significantly associated with lower rates in reoffending (Cochran, 2014). However, one of the earliest studies to consider the timing of visitation, Bales and Mears (2008) indicated visits near the release date were associated with a reduced likelihood in recidivating. Furthermore, Duwe and Clark (2013) found visits near the release date were the most important. On the other hand, Duwe and Johnson (2016) reported limited findings with varying significance for the recency of the visits and the measures of recidivism. Additionally, Lee (2019) found no empirical support for the effects of when of visits occur and reducing the likelihood of recidivism. Despite the range of conclusions, and given the theories described in the literature, we hypothesize AICs who receive visits

closer to the release date will be less likely to recidivate than AICs who receive visits earlier during the index custody due to support given during the reintegration process.

RQ_9: Which measure of visitation has the strongest association with reducing the likelihood of recidivism?

Finally, the current study works to attend to an aspect of visitation that existing research fails to consider. Within the literature, there is already documentation of the effects of whether being visited is associated with lower recidivism. However, variability in this association may be explained by the operationalization of the measures. Specifically, prior studies have explored an array of visitation measures – both dichotomous and continuous, the number of visits and visitors, in addition to the impact of individual relationships. Yet, to support the advancement of theory and applied practice, there is a need to identify the components that matter the most – having the most statistically significant association with recidivism. We address this need by examining each of these metrics and testing which has the strongest association with reducing the likelihood of recidivism. Due to the exploratory nature of this analysis, no hypothesis was made.

Methods

To address these questions, this study used data provided by the Oregon Criminal Justice Commission (CJC). The longitudinal study provided exhaustive information of 32,825 cases over a release period from January 1st, 2011, to December 31st, 2017, in Oregon. Informed by correctional facilities and law enforcement data systems (LEDS), in addition to Odyssey Case Manager, the CJC data set permitted the identification of every person in a state prison or custody facility during this timeframe. The release cohort typically represented sentences of at least 12 months for a conviction of a felony. This dataset presented information on formal visitation including the visitor identification number, date of the visit, and the visitors' relationship to the adult in custody, which was utilized to analyze effects on recidivism. Building off prior research, this research further investigated the relationship between visitation and reoffending.

Sample

The sample consisted of AICs released from Oregon facilities between 2011 and 2017, with a follow-up period of three years. 292 cases where the individual died in prison or died post-release but before the end of the three-year follow-up were excluded from the study, resulting in an eligible pool of 32,533. Per Oregon correctional policies on visitation, AICs with a sentence of fewer than 90 days or an unknown sentence length were removed from the analyses. Removal of these 187 cases accounted for the intake process, in addition to the submission and approval of visitation applications (n = 32,346). Given the statistical assumption of the independence of observations, 3,022 multiple incarcerations were excluded. Therefore, this study considered solely the first

releases for each AIC (n = 29,324). Additionally, 12 cases with missing data were excluded from the study (i.e., missing information on race or age at release). The final sample included 29,312 cases.

Within these first incarcerations 86.7% male offenders (n = 25,404) and 13.3% female offenders (n = 3,908). Most of the offenders in this release cohort were White (75.1%, n = 21,999). Nine percent of the offenders were Black (n = 2,634), 11.8% (n = 3,472) were Hispanic, 1.4% (n = 405) were Asian, 2.7% (n = 791) were American Indian or Native American, and less than .1% (n = 11) of the offenders were Native Hawaiian or Pacific Islander. The average age of the sample was 36.7 years old (SD =11.52).

Measures

Independent Variables

The current study builds off prior literature by incorporating a multifaceted perspective on prison visitation. Per the research on measures of social networks, in conjunction with having ever been visited, the number of visits, number of visitors, number of distinct people who visited, number of distinct relationships, the AIC-visitor relationship, and the timing of the visitors during the first incarceration were utilized to provide a comprehensive look at the impact of in-person visits. Each measure provided distinct insight into the effects of prison visitation. Thus, these seven variables were used to examine the visitation network on recidivism.

Ever visited. A necessary analysis of this data included determining whether visitation influenced the likelihood of recidivism. Therefore, a dichotomous variable of having ever been visited was created to identify differential outcomes (no = 0, yes =1).

Visits. Frequency referred to the total number of unique visit dates during the sentence being served for the first incarceration between 2011 and 2017. The number of unique dates was identified based on whether an AIC received at least one visit on a given date during their index incarceration. This variable captured the total number of unique dates in which an AIC was visited, and therefore attempted to measure one aspect of the frequency of visitation.

Visitors. To address potential oversight in solely examining the count of unique visit dates, the current research also accounted for the number of visitors for an AIC during the index incarceration. Namely, there may be several ways an AIC can have a greater number of visitors than the number of reported visits. For example, an AIC may be visited by four people in the same visit for a total of four visitors, as opposed to simply having one visitor per visit. Therefore, the number of visitors may provide insight into a different aspect of visitation which is also important to consider.

Distinct people who visited. The count and identification of specific individuals were also deemed important to consider. The CJC dataset afforded the ability to classify visitors based on cataloging the identification number provided to individual visitors, each time they visit. The current study examined the number of distinct visitors per month to gain insight into the distribution of visitors during the first incarceration. Monthly numbers of distinct visitors were computed using 30.5 days. Identification of these distinct visitors was used to establish the breadth of the visitation network.

Distinct relationships. The "diversity" of relationships was measured using the count of different relationships present in prison visitations as a proxy for the types of

enacted support. Therefore, one point was given for each represented relationship (i.e., spouse, parent, child, sibling, other family, friends, or other) in the visits for the sentence served. That is, visitation network diversity is measured on a scale to indicate no diversity (0 = no visitors) to very diverse (7 = visits by a spouse, sibling, parent, other family member, friend, child, *and* other). Relationships were measured based on the role of the visitor in relation to the AIC (i.e., "parent" defines a parent of the AIC). Variations across visitor relationships were also calculated on a per month basis (visits by visitor relationship divided by 30.5 days). Thus, this measure was used to conceptualize the type of support present within the visitation network during the index incarceration. Additional analyses were run to determine which of the relationships was most associated with a decrease in the likelihood of recidivism.

Timing of visitors. The timing was determined using quartiles based on the length of the time in prison (i.e., for a prison sentence of one year, quartiles consisted of visits every three months. For a prison stay of four years, the quartiles were used to measure the number of visits each year). Utilizing the start and end dates to establish the total length of time in prison (in days), the length of the stay was divided into quartiles. Thus, the variable was coded using the number of visitors per quartile (*Q1, Q2, Q3,* and *Q4*) for each of the cases in this study. Quartile 1 (*Q1*) referred to the start of the index incarceration, while Quartile 4 (*Q4*) referred to the end of the prison stay. Furthermore, to account for varying prison sentence lengths, monthly visitation measures (e.g., total visitors per quarter divided by 30.5 days) were utilized to standardize comparisons.

Because these variables examine various aspects of visitation, there was concern of multicollinearity. Analyses compared correlations of each visitation measure to identify potential overlap[1]. Multicollinearity was classified when the correlation coefficient, Pearson's *r* was greater than .80. As expected, the number of visits was highly correlated with the number of monthly visitors (*r* = .94). Similarly, *Visits* and *Visitors* were highly associated with visitors during each of the quartiles. Having a visitor in Q2 increased the likelihood of having a visit in Q3 (*r* = .85). Additionally, an AIC with a visitor in Q3 was more likely to have a visit in Q4 (*r* = .90). Despite this, visitors in Q2 were not deemed significantly related to visitors in Q3. The results of the correlations indicate visitors in the first quartile were not highly associated with other facets of visitation.

Dependent Variables

Recidivism. This study focused on a new arrest for a misdemeanor or felony within three years after release. Therefore, recidivism was conceptualized per a dichotomous measure of rearrest (0 = no, 1 = yes), with an average of .45 (*SD* = 0.497).

Control Variables

Demographics. The demographic control variables of the offender include dichotomous measures of race, and sex – with White and male being the referent groups – and the continuous variable of age at the time of release. Because of the low frequencies of Asian, American Indian or Native American and Native Hawaiian and

[1] Table A.1 in the Appendix provides a summary table for these correlations.

Pacific Islander offenders in this sample, they were combined and reported as *Other* under the race category. (See Table 1)

Length of incarceration. This scale measured the duration of the first incarceration for the cohort in months. Given the organizational policies of Oregon prisons, the study was limited to AICS with a stay longer than three months (length of stay > 2.9 months). The average length of stay was roughly three years (*SD* = 39.4 months) (Table 1).

Number of facilities. The number of facilities refers to the number of facilities an AIC resided in for the index incarceration. Moreover, this number indicates the number of times an AIC was transferred to another facility. As shown in Table 1, the individuals in this cohort were in an average of three facilities during the index incarceration (*SD* = 1.5).

PSC risk score at release. Offender risk was evaluated using a risk assessment developed by the CJC and Oregon Department of Corrections. An actuarial scale, ranging from 0 – 100, the Public Safety Checklist (PSC) is a comprehensive risk assessment. Applicable variables for this study include static measures of criminal history such as the number of prior arrests, prior misdemeanor convictions, prior felony convictions, prior prison admissions, and prior status revocations, as well as the most serious offense type. The predictive accuracy of the scale was .729 AUC for a new felony conviction (Henning & Labrecque, 2019). Therefore, the current research was able to control for these risk factors in addition to factors further identified by the CJC and DOC to influence the likelihood of reoffending, such as drug use, offense crime types, and measures of

misconduct. As denoted in Table 1, the average PSC risk score suggested an average of medium-level risk with a score of over 28 at release (*SD* = 12.5).

Weighted Facility Distance. Recent studies have highlighted the potential effects of spatial distance on the likelihood of visitation (Cochran et al., 2016, 2017; Cochran & Mears, 2013; Duwe & McNeeley, 2020; Lee, 2019; Mitchell et al., 2016; Sitren et al., 2020). Greater distances may require more resources to travel, and therefore may indicate the strength of these social ties (McNeeley & Duwe, 2020). Given this, the current study examined the relationship between the distance of the facility in which the offender was housed, and the county of their most serious conviction. This served as a proxy for the home county in which their visitation network is most likely to be derived. Thus, the average distance was calculated using the "crow-flight" distance between the two latitude and longitude points. To account for incarceration at multiple facilities, a weighted average was taken of the distance between each facility and the centroid for the "home" county for each AIC. This weighted average was calculated using the length of stay of each facility and its distance to the home county. Such that, a three-year stay at a facility 300 miles from the home county will report a higher weighted average than a three-month stay at the same facility. The average weighted facility distance of the total number of facilities per AIC to their home county was over 116 miles (*SD* = 78.4). Table 1 provides a summary for the descriptive statistics, in addition to the Pearson's *r* point-biserial correlation coefficients for the control variables and rearrest.

Table 1.

Descriptive Statistics and Correlations of Control Variables with Recidivism (Rearrest)

Variables	% or *M*	*SD*	*r*[a]
Demographics			
Sex			
Male (%)	86.7		
Female (%)	13.3		-.054*
Race			
White (%)	75.1		.051*
Black/AA (%)	9.0		.047*
Hispanic (%)	11.8		-.125*
Other (%)	4.1		.026*
Age at release	36.7	11.52	-.185*
Index Incarceration			
Length of incarceration (months)	34.32	39.38	-.161*
Number of facilities spent time in	3.06	1.53	.038*
PSC risk score at release	28.61	12.45	.381*
Weighted facility distance (miles)	116.29	78.35	-.027*

Note. N = 29,312.
[a]Point-biserial correlations.
* $p < .001$.

Analytical Plan

The current study utilized IBM SPSS Statistics for the analyses of the data. The initial step to address RQ_1 examined frequencies to determine the descriptive statistics of the sample. Regarding the second research question, a chi-square test of association determined whether the differences between AICs who were rearrested or not were significant. Following the results of this bivariate analysis, a binary logistic regression tested the relationship between this dichotomous visitation measure and rearrest. Next, the study turned to continuous visitation measures. For research questions three through seven, considering the varying aspects of visitation networks, bivariate correlations were run to assess the relationship between each of the independent variables, while controlling for demographic and index incarceration variables, and rearrest. The final

step, for the second through the seventh research questions, used a binary logistic regression to gain insight into the nature of the relationship between each of the visitation variables, the control variables, and the dichotomous outcome of rearrest. Given the large sample size, significance was examined at the $p < .001$ level. To address the eighth, and final, research question concerning the visitation measures most statistically significant in association with the outcome of rearrest, simultaneous binary logistic regressions were run. The models were comprised of all the visitation variables, excluding and replacing variables with possible multicollinearity ($r > .80$), and control variables. Additionally, the goodness-of-fit of the models was determined using the Bayesian Information Criterion (BIC), Chi-square and Wald statistics, p-values, and Nagelkerke's R-square. Comparative analyses were run using logged data to verify the validity of the results.

Results

RQ_1: How many AICs receive visits?

Of the 29,312 cases in our sample, 65.7% were visited at least during the index incarceration (*n* = 19,269). Among those receiving a visit, the average number of visits was 41.6 (See Table 2). Given that any prison visit can have multiple visitors, we also calculated the number of visitors for each AIC. The average for those visited was 68.7 visitors. The data provided also allowed us to quantify the number of distinct people who visited an AIC during their index incarceration. There was a mean of 5.5 distinct people per AIC. Finally, visitors were coded into different categories based on their relationship to the AIC. This allowed us to document the number of distinct relationships where the AIC received at least one visit.

Looking into detail on the visitors' relationship to the AIC, we found 41.7% of AICs received at least one visit from a parent (*M* = 19.1 visits for those visited). Visits by friends were slightly less common, with 41.5% of AICs reporting visits during the index incarceration (*M* = 16.7). Other family visits were recorded for 30.3% of AICs (*M* = 8.3). Receiving a visit by a sibling was documented by 29.6% of AICs (*M* = 6.7). In this sample, 22.4% of AICs were visited at least once by a child (*M* = 9.9). At least one visit by a spouse was received by 7.4% of AICs (*M* = 7.5). Lastly, the proportion of AICs who received a visit by another type of visit was 2.6% (*M* = .5).

Next, we looked at when people visited. In the first quartile of their incarceration, 39.2% of AICs received at least one visitor. For the AICs who were visited at least once, the average number of visitors in *Q1* was 13.1. In *Q2*, 50.2% of AICs received at least

one visitor, with an average number of 17.7 visitors. The largest proportion of AICs saw visitors in *Q3*, with 51.7% recording at least one visitor. The mean for this quartile was 18.2 visitors. The final quartile had 51.6% of AICs seeing at least one visitor. Additionally, *Q4* recorded the greatest average among those visited, with 19.9 visitors during this period.

Table 2.

Descriptive Statistics for Visitation Measures: Total Sample vs. Visited Sample

	Total Sample	Visited		
Variables	% Visited	*M*	*SD*	Range
Ever visited	65.7			
Number of visits		41.58	93.33	1 – 2,401
Number of visitors		68.74	143.13	1 – 2,938
Distinct people who visited		5.46	5.24	1 – 84
Distinct relationships		2.67	1.37	1 – 7
Spouse	7.4	7.53	56.10	1 – 2,052
Child	22.4	9.90	37.01	1 – 1,343
Sibling	29.6	6.71	21.71	1 – 947
Parent	41.7	19.10	52.69	1 – 2,000
Friend	41.5	16.69	48.72	1 – 1,623
Other family	30.3	8.32	27.81	1 – 1,008
Other	2.7	.48	6.73	1 – 436
Q1: number of visitors	39.2	13.09	35.97	1 – 696
Q2: number of visitors	50.2	17.66	41.80	1 – 867
Q3: number of visitors	51.7	18.15	41.88	1 – 1,183
Q4: number of visitors	51.6	19.85	44.28	1 – 1,056

Note. N = 29,312.

RQ_2: Are AICs who are visited less likely to recidivate than AICs who are not visited?

Within this cohort, 44.7% recidivated with a new arrest within three years of their release (n = 13,113). A chi-square test of association found significant differences in recidivism between those who were (42.2%) and were not visited (49.7%) and their reentry outcomes $\chi^2(1) = 151.0$, $p < .001$. The odds of recidivating were 1.4 times higher for AICs that did not receive a visit. This association between visitation and recidivism would be considered "small" with regard to effect size terminology (Cramer's V = .072).

While the prior analysis suggests AICs who are visited are less likely to recidivate, it is possible this finding reflects the impact of other factors that might differ between those visited and those who are not. To control for this, a binary logistic regression was run. Table 3 presents the results of this analysis.

Table 3.

RQ 2: Binary Logistic Regression for Ever Visited and Recidivism (Rearrest)

Variables	B	*SE*	Odds Ratio	*p*
Visitation variable (per month)				
Ever visited	-.231	.029	.794*	< .001
Demographics				
Sex				
Female	.009	.045	1.009	.836
Race (ref = white)				
Black	.323	.045	1.381*	< .001
Hispanic	-.754	.044	.470*	< .001
Other	.210	.064	1.233	.001
Age at release	.005	.001	1.005	.001
Index Incarceration				
Length of incarceration (months)	-.004	.000	.996*	< .001
Number of facilities	.145	.011	1.156*	< .001
PSC risk score at release	.070	.001	1.073*	.000
Weighted facility distance (miles)	.000	.000	1.000	.318
Constant	-2.505	.098	.082*	< .001
χ^2 (10)		5,323.072*		.000
BIC		35,088.346		
Nagelkerke R^2		.222		

Note. Log-transformed models did not report a large substantive change in the magnitude (odds of rearrest), with a 17.5% difference[2].
*$p < .001$.

Similar to prior findings within the literature, the results of model 1 indicate being visited lowers the likelihood of recidivism. This model was statistically significant, $\chi^2(10) = 5{,}323.07$, $p < .001$, and explained 22.2% (Nagelkerke R^2) of the variation in the outcome, recidivism. The model indicated, while controlling for other factors, the odds of

[2] The variation in the magnitude may be due to the dichotomous measure being unable to measure the nuances within visitation. Further analysis of the aspects of visitation revealed no significant differences.

recidivating were 20.6% lower for AICs who were visited as compared to those who were not visited (odds ratio [*OR*] = .794, $p < .001$)[3].

RQ_3: Are AICs who receive a greater number of visits less likely to recidivate than AICs who receive fewer visits?

First, to account for a possible influence of varying sentence lengths on the number of visits received, successive analyses utilized monthly measures to standardize comparisons. Table 4 summarizes the descriptive statistics and bivariate analyses using Pearson's *r* point-biserial correlation coefficients of these monthly visitation measures, and recidivism[4]. Looking at the monthly descriptive statistics, AICs received an average of 0.9 visits per month (*SD* = 1.6). This monthly measure of visitation was negatively correlated with recidivism ($r = -.078$), a small, but significant association ($p < .001$).

[3] For more information regarding a baseline regression of the control variables, please refer to Appendix A.2. for a summary of these findings.
[4] For researchers interested in a correlation matrix of the visitation variables, please see Table A.1 in the Appendix.

Table 4.

Descriptive Statistics and Correlations of Visitation Variables with Recidivism (Rearrest)

Variables	% or *M*	*SD*	*r*[a]
Ever visited (%)	65.7		
Number of visits (per month)	.86	1.63	-.078*
Number of visitors (per month)	1.42	2.70	-.092*
Distinct people who visited	3.59	4.97	-.134*
Distinct relationships	1.76	1.69	-.114*
Spouse (per month)	.12	.78	-.062*
Child (per month)	.23	.86	-.063*
Sibling (per month)	.13	.42	-.058*
Parent (per month)	.40	1.01	-.042*
Friend (per month)	.37	1.11	-.043*
Other family (per month)	.16	.56	-.052*
Other (per month)	.01	.13	-.046*
Timing of visitors (per month)			
Q1: number of visitors	.86	2.11	-.107*
Q2: number of visitors	1.55	3.25	-.083*
Q3: number of visitors	1.62	3.33	-.072*
Q4: number of visitors	1.64	3.34	-.078*

Note. N = 29,312.
[a]Point-biserial correlations.
* $p < .001$.

Although the correlation analysis implies a significant, negative effect on post-release outcomes, the bivariate analysis does not describe the how the number of visits is associated with recidivism. Therefore, to facilitate understanding of this relationship, the next step is the binary logistic regression. Table 5 presents the findings.

Table 5.

RQ 3: Binary Logistic Regression for Number of Visits and Recidivism (Rearrest)

Variables	B	*SE*	Odds Ratio	*p*
Visitation variable (per month)				
Number of visits	-.095	.009	.910*	< .001
Demographics				
Sex				
Female	-.015	.045	.985	.735
Race (ref = white)				
Black	.329	.045	1.389*	< .001
Hispanic	-.753	.044	.471*	< .001
Other	.210	.064	1.233	.001
Age at release	.004	.001	1.004	.004
Index Incarceration				
Length of incarceration (months)	-.004	.000	.996*	< .001
Number of facilities	.136	.011	1.145*	< .001
PSC risk score at release	.069	.001	1.072*	.000
Weighted facility distance (miles)	.000	.000	1.000	.010
Constant	-2.450	.098	.086*	< .001
χ^2 (10)		5,374.699*		.000
BIC		35,017.247		
Nagelkerke R^2		.210		

Note. Log-transformed models did not report a large substantive change in the magnitude (odds of rearrest), with a 6.1% difference.
*$p < .001$.

Consistent with prior studies, the binary logistic regression suggests that a greater number of visits is associated with a greater decrease in odds of recidivating. Statistically significant, $\chi^2(10) = 5{,}374.70$, $p < .001$, the model explained 21.0% of the variation in rearrest. While controlling for several covariates, the model indicates the odds of recidivating decreases by 9.0% for each additional visit ($OR = .919$, $p < .001$).

To assess whether the association illustrated in Table 5 is driven by simply whether the AIC was visited or not, additional analyses were run using AICs who had been visited at least once (n =19,269). The findings suggest minor differences for the visited sample, with an 8.1% decrease in the odds of recidivating ($OR = .919$). Additional references to the visited sample for subsequent research questions will report the odds ratio for the visitation variable, provided in the footnote of the tables. This will be

excluded from the final research question due to the inclusion of all visitation metrics (i.e., having ever been visited).

RQ_4: Are AICs with a greater number of visitors less likely to recidivate than AICs with fewer visitors?

AICs received an average of 1.4 visitors per month (SD = 2.7). As shown in Table 4, the correlation coefficient presents a negative association with rearrest (r = -.092) with a small, yet significant (p < .001), effect size. Despite this, the coefficient for the number of visitors is higher than that of the number of visits, implying a greater association with recidivism. Using a binary logistic regression, we examine the functions of this association. Table 6 summarizes the outcome.

Table 6.

RQ 4: Binary Logistic Regression for Number of Visitors and Recidivism (Rearrest)

Variables	B	*SE*	Odds Ratio	*p*
Visitation variable (per month)				
Number of visitors	-.069	.006	.933*	< .001
Demographics				
Sex				
Female	-.006	.045	.994	.901
Race (ref = white)				
Black	.321	.045	1.378*	< .001
Hispanic	-.739	.044	.478*	< .001
Other	.209	.064	1.233	.001
Age at release	.003	.001	1.003	.023
Index Incarceration				
Length of incarceration (months)	-.004	.000	.996*	< .001
Number of facilities	.138	.011	1.148*	< .001
PSC risk score at release	.069	.001	1.071*	.000
Weighted facility distance (miles)	-.001	.000	.999	.002
Constant	-2.391	.098	.092*	< .001
χ^2 (10)		5,425.380*		.000
BIC		34,966.466		
Nagelkerke R^2		.226		

Note. Log-transformed models did not report a large substantive change in the magnitude (odds of rearrest), with a 4.1% difference. Minor differences were found for the visited sample (*OR* = .936).
* $p < .001$.

The third model finds as the number of visitors increases, the likelihood of recidivism decreases. This is statistically significant, $\chi^2(10) = 5{,}425.38$, $p < .001$, explaining 22.6% (Nagelkerke R^2) of the variance in the outcomes of the three-year follow-up for the AICs. The odds of recidivating were 6.7% lower for each additional visitor (*OR* = .933, $p < .001$), while controlling for demographic and index incarceration factors. Despite the differences in the magnitude of the association with the previous model, the BIC (the model-fit statistic) improves by 50.78 for the model looking at the number of visitors and rearrest. This provides strong evidence that the third model is better suited for the data (See Lorah et al., 2014, p. 238).

RQ_5: Are AICs with a greater number of distinct people who visited less likely to recidivate than AICs with fewer distinct people who visited?

Moving forward in the examination of visitors, the next analysis turns to the number of distinct people who visited. For this cohort, AICs received visits from an average of 3.6 different people during the index incarceration (*SD* = 5.0). Table 4 depicts the results of the bivariate test, which reported a significant negative association between the number of distinct people who visited and rearrest ($p < .001$). Though considered "small", the association records the strongest correlation of the visitation variables ($r = -.134$). To better explore the mechanism behind this relationship, a fourth binary logistic regression was run. A summary of the findings is shown in the table below.

Table 7.

RQ 5: Binary Logistic Regression for Number of Distinct People Who Visited and Recidivism (Rearrest)

Variables	B	*SE*	Odds Ratio	*p*
Visitation variables				
Distinct people who visited	-.043	.003	.958*	< .001
Demographics				
Sex				
Female	.037	.046	1.038	.418
Race (ref = white)				
Black	.324	.045	1.382*	< .001
Hispanic	-.741	.044	.476*	< .001
Other	.206	.064	1.229	.001
Age at release	.002	.001	1.002	.100
Index Incarceration				
Length of incarceration (months)	-.002	.000	.998*	< .001
Number of facilities	.154	.011	1.167*	< .001
PSC risk score at release	.069	.001	1.071*	.000
Weighted facility distance (miles)	.000	.000	1.000	.015
Constant	-2.435	.097	.088*	< .001
χ^2 (10)		5,438.727*		.000
BIC		34,953.119		
Nagelkerke R^2		.227		

Note. Log-transformed models did not report a large substantive change in the magnitude (odds of rearrest), with a 2.3% difference. Minor differences were found for the visited sample (*OR* = .956).
* $p < .001$.

Similar to the previous visitation models, the fourth model supports the likelihood of being rearrested decreases with a greater number of distinct people who visited. This was statistically significant, $\chi^2(10) = 5{,}438.73$, $p < .001$. Of the variance within the model, 22.7% (Nagelkerke R^2) could be explained by the distinct number of people who visited. Such that, in controlling for other factors, having an additional distinct visitor per month would reduce the odds of reoffending by 4.2% ($OR = .958$, $p < .001$). Although the difference in predictive odds was lower, the indication of the goodness of fit suggests the number of distinct people who visited is the most statistically significant (an improvement in the BIC by 13.35). Simply, the magnitude of the distinct people who visited was not as high when controlling for demographic and index incarceration factors.

RQ_6: Are AICs who have access to a greater number of distinct relationships less likely to recidivate than AICs who have access to fewer distinct relationships?

Further diving into aspects of visitors, we tested the bivariate associations of the distinct relationships present in the visitation network (Table 4). Descriptive analyses indicate an average of 1.8 relationships present (i.e., at least one spouse, child, sibling, parent, friend, other family, or other type of visitor) each month ($SD = 1.7$). That is, of the received visits, AICs were likely to receive visits from not only distinct individuals but there was a diversity of the type of social tie present in these visits. A relatively small effect ($r = - .114$), the correlation was significant ($p < .001$). A fifth regression model determined the nature of the association between the number of distinct relationships and the likelihood of rearrest within three years of release (Table 8).

Table 8.

RQ 6: Binary Logistic Regression for Distinct Relationships and Recidivism (Rearrest)

Variables	B	*SE*	Odds Ratio	*p*
Visitation variables				
Distinct relationships	-.100	.009	.905*	< .001
Demographics				
Sex				
Female	.041	.046	1.042	.372
Race (ref = white)				
Black	.316	.045	1.372*	< .001
Hispanic	-.744	.044	.475*	< .001
Other	.204	.064	1.227	.001
Age at release	.003	.001	1.003	.040
Index Incarceration				
Length of incarceration (months)	-.003	.000	.997*	< .001
Number of facilities	.155	.011	1.167*	< .001
PSC risk score at release	.069	.001	1.072*	.000
Weighted facility distance (miles)	.000	.000	1.000	.048
Constant	-2.434	.098	.088*	< .001
χ^2 (10)		5,395.932*		.000
BIC		34,995.914		
Nagelkerke R^2		.225		

Note. Log-transformed models did not report a large substantive change in the magnitude (odds of rearrest), with a 7.2% difference. Minor differences were found for the visited sample (*OR* = .889).
* $p < .001$.

The binary logistic regression found that increases in the number of distinct relationships decreased the likelihood of rearrest within the follow-up period. This finding was statistically significant, $\chi^2(10) = 5{,}395.93$, $p < .001$, and explained 22.5% (Nagelkerke R^2) of the variance in rearrests. That is, according to the model and controlling for other independent variables, the presence of another relationship is associated with a 9.5% decrease in the odds of recidivating (*OR* = .905, $p < .001$).

RQ7: Which distinct relationship has the strongest association with reducing the likelihood of recidivism?

Documentation of the different relationship categories allowed us to investigate which of these relationships has the greatest association with reducing the likelihood of

recidivism. Returning to the descriptives in Table 4, in reference to Pearson's *r*, we see visits by all relationship types were significant and negatively correlated with the likelihood of being rearrested ($p < .001$). Notably, visits by children reported the largest correlation ($r = -.063$), followed by a slight decrease in spousal visitation ($r = -.062$), followed by sibling visits ($r = -.058$), other family ($r = -.052$), other visitors ($r = -.046$), visits from friend ($r = -.043$), and finally, parental visits were met with the smallest effect size ($r = -.042$).

The prior analysis suggests visitor relationships might influence the likelihood of recidivism at varying rates. Therefore, a simultaneous binary logistic regression provided insight into which of these relationships is the most associated with the outcome of recidivism, rearrest. The results are recorded in Table 9.

Table 9.

RQ 7: Binary Logistic Regression for Who Visited and Recidivism (Rearrest)

Variables	B	*SE*	Odds Ratio	*p*
Visitation variables (per month)				
Who visited				
Spouse	-.075	.022	.927*	< .001
Children	-.056	.019	.945	.004
Sibling	-.108	.038	.898	.004
Parent	-.076	.015	.927*	< .001
Friend	-.054	.013	.948*	< .001
Other family	-.082	.027	.921	.002
Other	-.244	.127	.783	.055
Demographics				
Sex				
Female	-.007	.045	.993	.874
Race (ref = white)				
Black	.315	.045	1.370*	< .001
Hispanic	-.736	.044	.479*	< .001
Other	.208	.064	1.231	.001
Age at release	.003	.001	1.003	.040
Index Incarceration				
Length of incarceration (months)	-.004	.000	.996*	< .001
Number of facilities	.138	.011	1.148*	< .001
PSC risk score at release	.069	.001	1.071*	.000
Weighted facility distance (miles)	-.001	.000	.999	.002
Constant	-2.377	.099	.093*	< .001
χ^2		5,432.001*		.000
BIC (16)		35,021.560		
Nagelkerke R^2		.226		

Note. Log-transformed models did not report a large substantive change in the magnitude (odds of rearrest), with differences ranging from 3.7 to 15%. Minor differences were found for the visited sample (less than .009), however, analyses concluded spousal visits were not significant ($p = .002$).
* $p < .001$.

This statistically significant model demonstrated the importance of considering individual visitor relationships and their effects on reducing recidivism, $\chi^2(16) = 5{,}432.00$, $p < .001$, explaining 22.6% (Nagelkerke R^2) of the variance in the outcome. Although visits by each of the relationship types saw a decrease in rearrest, visits by a spouse, parent, or friend were statistically significant. These visits reduced the odds of recidivating by 7.3% ($OR = .927$, $p < .001$) for parents and spouses, and 5.2% ($OR = .948$, $p < .001$) for friends.

RQ_8: Are AICs who receive visits closer to release less likely to recidivate than AICs who receive visits earlier in their incarceration?

The correlations between the quartiles and rearrest (Table 4) indicate significant, negative correlations, with the largest correlation being Q1 (r = -.107, p < .001). This is followed by Q2 (r = -.083, p < .001), Q4 (r = -.078, p < .001), and Q3 (r = -.072, p < .001), respectively. Initial observation of the analyses suggests visits in *Q1* may have a greater impact on the likelihood of recidivism. However, as documented in Table A.1 (See Appendix A), indications of high multicollinearity (r > .80) between *Q2* and *Q3*, and *Q3* and *Q4*, evidenced a visit in *Q2* was associated with a higher probability of receiving a visit in *Q3*, and in return, receiving a visit in *Q4* before reentry. This implies that AICs who receive visits in the final quartile of their stay may have benefited from consistent visitation throughout their first incarceration. Therefore, interpretations of the seventh model should be made with caution, as the four measures were run in a simultaneous binary logistic regression (Table 10).

Table 10.

RQ 8: Binary Logistic Regression for Timing (Quartiles) and Recidivism (Rearrest)

Variables	B	*SE*	Odds Ratio	*p*
Visitation variables (per month)				
Q1: Number of visitors	-.058	.010	.944*	< .001
Q2: Number of visitors	-.009	.009	.992	.346
Q3: Number of visitors	-.003	.009	.997	.761
Q4: Number of visitors	-.021	.007	.979	.005
Demographics				
Sex				
Female	.002	.045	1.002	.965
Race (ref = white)				
Black	.318	.045	1.374*	< .001
Hispanic	-.740	.044	.477*	< .001
Other	.203	.064	1.225	.002
Age at release	.003	.001	1.003	.022
Index Incarceration				
Length of incarceration (months)	-.004	.000	.996*	< .001
Number of facilities	.139	.011	1.149*	< .001
PSC risk score at release	.069	.001	1.071*	.000
Weighted facility distance (miles)	-.001	.000	.999	.003
Constant	-2.397	.098	.091*	< .001
χ^2 (13)		5,444.336*		
BIC		34,978.367		
Nagelkerke R^2		.227		

Note. Log-transformed models did not report a large substantive change in the magnitude (odds of rearrest), with differences ranging between 0.0 and 4.0%. Minor differences were found for the visited sample (less than .001).
* $p < .001$.

Depicted in the table above, the eighth model marks the significance of when an AIC is visited. The model conveys that a greater number of visitors in *Q1* is associated with a decrease in the outcome. Statistically significant, $\chi^2(13) = 5{,}444.34$, $p < .001$, the model explains 22.7% of the variation in the outcome of rearrest. Implications of this analysis are that receiving another visitor in *Q1* was associated with a 5.6% reduction in the odds of recidivating ($OR = .944$, $p < .001$). Whereas the other quartiles were not reported to be significant at $p < .001$, *Q4* was nearly significant, recording an association of a 2.1% decreased likelihood in the odds of being rearrested.

RQ_9: Which measure of visitation has the strongest association with reducing the likelihood of recidivism?

While prior analyses of the current study reveal that each metric of visitation tested had a significant decrease in the odds of rearrest, the previous seven models could not distinguish which of these metrics may be most associated with this effect. That is, the models looked at the individual impact of each visitation measure. Using a simultaneous binary logistic regression, and while controlling for demographic and index incarceration covariates, we examine which aspect of visitation maintained its significance in the best-fitting model.

Given the multicollinearity between three of the visitation variables – the number of visits, the number of visitors, and the timing of visitors – three additional models were run substituting one of each of these three measures to explore which aspects of visitation would perform the best. Table 11 facilitates comparisons of these models.

Table 11.

RQ 9: Binary Logistic Regression for the Most Significant Predictors of Recidivism (Rearrest)

Visitation Variable	B	Wald	Odds Ratio (*SE*)	*p*
Model 1				
Ever visited	-.020	.215	.980(.043)	.643
Number of visits (per month)	-.044	18.193	.957(.010)*	< .001
Distinct visitors	-.030	29.953	.970(.006)*	< .001
Distinct relationships	-.011	.370	.989(.018)	.543
χ^2 (13)			5,461.524*	
BIC			34,961.178	
Nagelkerke R^2			.228	
Model 2				
Ever visited	-.034	.629	.967(.042)	.428
Number of visitors (per month)	-.040	34.396	.961(.007)*	< .001
Distinct visitors	-.026	21.668	.974(.006)*	< .001
Distinct relationships	-.003	.024	.997(.018)	.876
χ^2 (13)			5,478.480*	
BIC			34,944.223	
Nagelkerke R^2			.228	
Model 3				
Ever visited	-.040	.888	.961(.043)	.339
Q1 (per month)	-.042	15.246	.959(.011)*	< .001
Q2 (per month)	-.005	.362	.995(.009)	.547
Q3 (per month)	.001	.014	1.001(.009)	.907
Q4 (per month)	-.012	2.411	.988(.008)	.120
Distinct visitors	-.024	17.288	.977(.006)*	< .001
Distinct relationships	-.004	.042	.996(.018)	.844
χ^2 (16)			5,489.860*	
BIC			34,963.701	
Nagelkerke R^2			.229	

Note. N =29,312. Excluded from the table, the models controlled for demographic and index incarceration variables. The results of the log-transformed models indicated similar findings.
* $p < .001$.

Model 1 found, while controlling for other factors, the most significant measures were the number of visits and the number of distinct visitors ($p < .001$). The model suggests for every additional visit, the odds of recidivating were decreased by 4.3% (*OR* = .957). For every additional distinct visitor, these odds were reduced by 3% (*OR* = .970). This model was statistically significant, $\chi^2(13) = 5{,}461.52$, $p < .001$, and explained 22.8% (Nagelkerke R^2) of the variation in the outcome, recidivism. The second model, replacing the number of visits for the number of visitors, saw similar results with *Visitors*

and *Distinct People Who Visited* maintaining significance ($p < .001$). Another statistically significant model, $\chi^2(13) = 5{,}478.48$, $p < .001$, Model 2 explained 22.8% (Nagelkerke R^2) of the variance. With slightly more conservative odds for the effect of each distinct person who visited, the second model found for each additional visit and each additional distinct visitor reduced the odds of recidivating by 3.9% ($OR = .961$) and 2.6% ($OR = .974$), respectively. Despite similarities in explanatory power, improvement in the BIC by 19.48 indicated a greater model fit. Results of the third and final model emphasize the importance of visitors in *Q1* and *Distinct People Who Visited* in mitigating the likelihood of recidivism, with a reduction in odds of rearrest by 4.1% ($OR = .959$) and 2.3% ($OR = .977$), respectively. Another statistically significant model, $\chi^2(13) = 5{,}489.86$, $p < .001$, it showed a small improvement in explanatory power at 22.9% (Nagelkerke R^2). However, as an indicator for model fit that penalizes for additional variables within the model, the BIC supports Model 2 to be best suited for this data. Given these findings, analysis of the test statistics was needed to discern the visitation variable with the most significant association with rearrest for this sample.

Across all three models, *Distinct People Who Visited* is statistically significant in reducing the odds of being rearrested ($p < .001$). Looking at Model 3, with the greatest explanatory power, we see visitors in *Q1* reduce the odds of recidivating by 4.1%. This is greater than the reported 2.3% reduction in odds for the distinct people who visited. However, examination of the Wald statistic, which denotes whether the coefficient is significantly different than zero (Field, 2018, p. 645), illustrates the importance of distinct visitors in comparison to *Q1*. Variation in the inferred importance of the variables

through the odds ratio may be explained by intercorrelation between the different visitation variables (p. 295). On the other hand, in Model 2, indicated by the BIC as the model better suited for the data, *Number of Visitors* has the largest Wald statistic, with a 3.9% decrease in the odds of rearrest. In this model, *Distinct People Who Visited*, decreased the odds by 2.6%. Despite this, as previously mentioned, this may simply be a consequence of the relationship between the variables added to the model[5]. However, log-transformed models resulted in similar findings of the statistical significance of the distinct people who visited across all models ($p < .001$, and the Wald statistics).

[5] For a summary of the individual effects of each other variables, please refer to Table A.3 in Appendix A.

Discussion

Despite researchers pointing to prison visitation as a pathway of desistance during reintegration, few studies have considered the inclusion of more sophisticated measures of visitation. Specifically, there is a lack of empirical research that utilizes more than four measures of visitation to capture its effects. Additionally, to the knowledge of these authors, there is an absence of research that compares which visitation variable may be the most significant regarding the influence on recidivism. Moreover, much of the literature derives from Florida or the Midwest, highlighting the need to discern whether these findings would be similar elsewhere in the United States.

The current study found the proportion of AICs who were visited in Oregon was larger in comparison to the parameters presented by prior research. Of the AICs who were released between 2011 and 2017, 65.7% (n = 19,269) received at least one visit during the index custody. We find the percent of ever being visited is higher in Oregon, in comparison to the 23-61% reported in the literature (Atkin-Plunk & Armstrong, 2018; Bales & Mears, 2008; Cochran et al., 2016, 2020; Duwe & Clark, 2013; Mears et al., 2012). These findings, however, may be attributed to a couple explanations. The first being the analysis of the entire length of index incarcerations of various lengths in this study, rather than incarcerations of less than two years or the examination of visitation in the year prior to release (see Duwe & Clark, 2013). For example, Cochran (2014) found the most common visitation pattern was visits in the first half of the index custody. While the Florida study focused on incarcerations of eight to 17 months, implications of visits near the start date illustrate the importance of considering visitation during the entire time

served, especially for longer incarcerations. Second within the past 10 years, more studies have looked at the potential benefits of in-prison visits. Therefore, higher levels of visitation may also reflect changes in visitation patterns as more research has come to light. In addition, it is possible that correctional facilities may have considered these findings to create evidence-based programming to decrease the likelihood of recidivism using visitation.

Consistent with the literature, our analyses found being visited had a significant effect on the likelihood of recidivating in Oregon (Atkin-Plunk & Armstrong, 2018; Bales & Mears, 2008; Cochran, 2014; Duwe & Clark, 2013; Duwe & Johnson, 2016; Duwe & McNeeley, 2020; McNeeley & Duwe, 2020; Mears et al., 2012). AICs who received at least one visit reported a lower rate of post-release rearrest than individuals who were not visited within three years of release. Additionally, a greater number of visits, visitors, number of distinct people who visited, and the number of distinct relationships were associated with a greater reduction in the likelihood of recidivating. Visits by spouses, parents, and friends had the highest statistical significance of the relationship types for this sample. This study also found, in Oregon, receiving visitors in the first quartile was associated with a significant decrease in the likelihood of being rearrested. Yet, visitors in the final quartile nearly reached significance in lower predictive odds, hinting at the importance of visitation throughout the index custody.

Notably, our findings demonstrate the negative association with recidivism extends beyond simply whether an AIC was visited, as many of the analyses of solely the visited sample were also statistically significant. In addition to being visited, measures

such as the number of visits, number of visitors, the number of distinct people who visited, the relationship of the visitor to the AIC, and the number of social relationships are important to consider. Importantly, utilization of visitation metrics has varied from study to study, with only one study looking at six of the seven measures presented in this study (see Duwe & Clark, 2013). Moreover, this study documented variable effects for each of these associations and rearrest.

Lastly, examination of measures of model fit and significance, provided a basis of comparison for which aspect of visitation is the most statistically significant in predicting the odds of recidivism. In fact, tests of the visitation metrics indicated looking at visitors is an important aspect. Specifically, it is the number of *distinct* visitors, or people who visited, that was the most statistically significant in predicting the likelihood of rearrest. Similar to Minnesota with a reported 3-4.8% decrease in the odds of recidivating per individual visitor (Duwe & Clark, 2013), each additional distinct person who visited was associated with 4.2% lower odds of being rearrested in Oregon.

There are key implications for visitation and, more specifically, visits from a diverse network of visitors regarding reentry. As the literature has found, it is not solely whether an AIC has been visited that is important, but there may be other factors of visitation contributing to the effects. Studies have documented having greater "doses" of visits was associated with reportedly lower odds of recidivating (Mitchell et al., 2016). Furthermore, the current research suggests a greater number of visits, from a greater number of visitors, with a greater number of distinct visitors from a greater number of distinct relationships is associated with post-release outcomes. Moreover, subsequent

analyses determined that is the number of distinct people who visited that may be exerting the most influence on recidivism. This finding indicates the importance of have a diverse network of visitors to promote positive reintegration, thereby justifying policymakers to consider options to increase the accessibility of visitation.

One option is to look at the visitor experience. Studies have cited the hostile environment and interactions with correctional staff as potential deterrents to visitation. This may include the lack of an indoor waiting area during harsh weather conditions or a comfortable visitation setting, or being treated as criminals by the staff may discourage visitors from future visits (Christian, 2005; Pierce, 2015). A more recent study by Tartaro and Levy (2017) found exposure to the correctional environment, such as incidents of arrest within the visiting area, could have a potentially negative impact on children. Additionally, concerns over privacy and other distractions in the shared vicinity may result in a strained or negative visit, leading to greater distress for the AICs (see Sitren et al., 2020; Tartaro & Levy, 2017). Thus, minor policy changes to attend to these details of the visitation experience may help to promote a more positive experience, and, therefore, encourage future visits from a greater number of people.

Notably, the time and money needed to traverse this distance may also limit the frequency of visitation. One potential option to increase the likelihood of visitation is to alleviate these obstacles encountered by visitors. For example, the geographic distance to the facility may affect whether an AIC is visited due to time conflicts or necessary funds (Christian, 2005; Cochran et al., 2016; McNeeley & Duwe, 2020; Pierce, 2015; Tewksbury & DeMichele, 2005). Studies have reported an average distance of 77 – 204.8

miles to travel to a facility (Cochran et al., 2016; McNeeley & Duwe, 2020; Pierce, 2015). In 2005, the reported financial burden to visit averaged $27-$80 per visit (Christian, 2005; Tewksbury & DeMichele, 2005). However, the estimated costs have most likely changed in the past 15 years, and extensive distances might have also increased the cost, specifically concerning the use of public transportation (Christian, 2005; Cochran et al., 2016). Accordingly, it is recommended that correctional practices consider ways to reduce these barriers.

One model is the "Get on the Bus" program facilitated by the Center for Restorative Justice Works and California Department of Corrections and Rehabilitation. This program hosts an annual event for children and their caregivers across the state of California to visit incarcerated parents without having to worry about cost of transportation or food and supplies for the visit. GOTB works to promote regular visitation between AICs and their children with the objectives of maintaining and strengthening these familial ties, in addition to increasing the likelihood of reunification after release and thereby decrease the risk of recidivism ("Get on the Bus", 2021). While any visitation may be more beneficial than no visitation, as this study and prior studies have found, policymakers should consider ways to increase regular visits and bolster the maintenance of social ties, and in turn, decrease the likelihood of negative post-release outcomes.

Limitations

As with any research, the current study is not without its limitations. First, although the current research provides some insight into the effects of visitation, state-

specific visitation policies may potentially limit which AICs are able to receive visits (Austin & Hardyman, 2004; Boudin et al., 2013; See Duwe & McNeeley, 2020, p. 575). In Oregon, visitation is contingent on the incentive level or "visiting points" an AIC has, which is dependent on the length of incarceration and behavior within the facility itself. Hence, the number of visits or visitors and AIC receives may likely reflect other factors of the AIC including issues with misconduct or length of time spent in the facility.

Second, the data provided already-available measures similar to those found within the prison visitation literature. Thus, analyses were restricted to the information previously collected. For example, *Visits* was measured using the number of unique dates in which an AIC was visited at least once, without accounting for having multiple visits in a day (i.e., being visited in the morning, and one in the afternoon of the same day). Additionally, insight into the visitors was restricted. Specifically, the reliability and accuracy of the relationship classification is unknown. For instance, a visitor may be listed a child, however this does not provide insight into whether the child is the child of the AIC being visited or if there is some other relation (i.e., niece/nephew, grandchild, younger sibling). Furthermore, little is known about the classification process of visitors, and their backgrounds (i.e., prior criminal history).

Third, while the current study and the prior literature have looked at the outcome of recidivism to gauge successful reentry, there may also be other indicators of positive reintegration. In fact, research has also examined effects of social capital, such as social support, as markers of increased likelihood of reunification and optimism for reentry (Anderson et al., 2020; Liu et al., 2016). Additionally, instead of criminal behavior,

studies have turned to housing, and employment as determinants of post-release success (Berg & Huebner, 2011; Mowen et al., 2019).

Given these limitations, there are a few suggestions for future research. The first being the need for further investigation into the factors affecting the likelihood of visitation. Accounting for visitation simply identifies who gets visited or not. It does not explain the factors influencing the decision of potential visitors (i.e., antisocial behavior, expressed desire of the AIC). Studies have examined various contexts of the visitors (i.e., spatial distance, community disadvantage) and the AICs (i.e., sex, race, and age) to gain insight into what may factor into the decision to visit (Cochran et al., 2016, 2017; McNeeley & Duwe, 2020). These findings, however, are limited in empirical support. Thus, future research is advised to delve further into the use of propensity score matching (PSM) to limit potential biases of potentially confounding variables.

Additionally, greater insight into the AIC-visitor relationships is needed. Although such information may be limited by data collection, understanding of either visits by prosocial ties or criminal associates (see Cochran & Mears, 2013) is necessary. Furthermore, it is imperative to distinguish whether the relationships may be detrimental to the AICs' experiences, such as visits from abusive parents, or spouses/romantic partners. Namely, implications of negative experiences during a visit may serve to increase the stress and strain of incarceration and nullify the potential advantages of visitation (see Baker et al., 2021; see Beckmeyer & Arditti, 2014).

Future studies might also consider testing for different measures to assess post-release outcomes. Some studies have theorized when it comes to desistance, social capital

may be instrumental (Anderson et al., 2020; Mowen et al., 2019). That is, it may not be the social support that matters but the resources these channels of social support provide. For example, with the support of family and friends, attainment of employment or education may also indicate successful reentry. In addition to procurement of these forms of social capital, studies could also account for how many of the visitors have access to these forms of social capital, or what forms of capital they might provide.

Conclusion

Given the high costs – both financial and social (i.e., funding for prison facilities, processing within the criminal justice system, and community safety) – associated with repeat criminal behavior, it is in the interest of both communities and correctional systems to promote successful reentry into their communities. The association between visitation, in general, and desistance from crime is well-documented (Acevedo & Bakken, 2001; Atkin-Plunk & Armstrong, 2018; Bales & Mears, 2008; Barrick et al., 2014; Berg & Huebner, 2011; Cochran, 2014; Duwe & Clark, 2013; Duwe & Johnson, 2016; Duwe & McNeeley, 2020; Hairston, 1991; McNeeley & Duwe, 2020; Mears et al., 2012; see Mitchell et al., 2016). Additionally, our research indicated the importance of not only the quantity of *visits* and *visitors* but also the quantity of *distinct people who visited*. These findings justify the need to improve opportunities for AICs to receive more visits from a greater number of distinct people. Such that, doing so may be increasingly beneficial to reducing recidivism. If in fact the more visitation the better, implications of this study justify, while also ensuring the safety of correctional staff, visitors, and AICs, promoting support both during and after incarceration through visitation.

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Table A.1.

Correlation Matrix: Visitation Variables

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Number of visits (monthly)		1														
2 Number of visitors (monthly)		**0.9**	1													
3 Distinct People who visited		0.5	0.6	1												
4 Distinct relationships		0.5	0.5	0.8	1											
Visits by (monthly)																
5	Spouse	0.5	0.5	0.2	0.2	1										
6	Child	0.5	0.7	0.3	0.3	0.4	1									
7	Sibling	0.4	0.5	0.4	0.4	0.1	0.1	1								
8	Parent	0.6	0.6	0.4	0.4	0	0.2	0.4	1							
9	Friend	0.7	0.6	0.3	0.3	0	0.2	0.1	0.2	1						
10	Other family	0.4	0.5	0.4	0.3	0.1	0.2	0.3	0.3	0.1	1					
11	Other	0.1	0.1	0.1	0.1	0	0.1	0	0	0	0	1				
Recency																
12	Q1	0.7	0.8	0.5	0.5	0.4	0.5	0.4	0.5	0.4	0.4	0.1	1			
13	Q2	**0.9**	**0.9**	0.5	0.5	0.4	0.6	0.4	0.6	0.6	0.5	0.1	0.8	1		
14	Q3	**0.9**	**0.9**	0.5	0.5	0.4	0.6	0.4	0.6	0.6	0.5	0.1	0.6	**0.9**	1	
15	Q4	**0.9**	**0.9**	0.5	0.5	0.4	0.6	0.4	0.6	0.6	0.5	0.1	0.6	0.7	**0.9**	1

Note. All correlations were significant at $p < .001$. Bolded coefficients indicate multicollinearity, $r > .80$.

Table A.2.

Base Model for Binary Logistic Regression between the Control Variables and Recidivism (Rearrest)

Variables	B	*SE*	Odds Ratio	*p*
Demographics				
Sex				
Female	-.039	.045	.961	.381
Race				
Black	.348	.044	1.417*	< .001
Hispanic	-.752	.044	.471*	< .001
Other	.227	.064	1.254*	< .001
Age at release	.007	.001	1.007*	< .001
Index Incarceration				
Length of incarceration (months)	-.004	.000	.996*	< .001
Number of facilities	.131	.011	1.140*	< .001
PSC risk score at release	.071	.001	1.073*	.000
Weighted facility distance (miles)	.000	.000	1.000	.551
Constant	-2.709	.095	.067*	< .001
χ^2 (9)		5,258.576		.000
BIC		35,122.984		
Nagelkerke R^2		.220		

* $p < .001$.