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ECONOMIC FACTORS, SOCIAL STRAINS, AND RECIDIVISM TENDENCY: THE MEDIATING ROLE OF CRIMINAL BEHAVIOR AMONG PRISONERS IN LAHORE DIVISION, PAKISTAN

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KEYWORDS	ABSTRACT
Economic Factors, Social Strains, Criminal Behavior, Recidivism Tendency, Prisoner Reintegration	The study examines the associations among economic factors, social strains, criminal behavior, and recidivism tendency among 370 convicted male prisoners in Lahore Division, Pakistan. Grounded in Becker's Theory of Crime and Agnew's General Strain Theory, the study tests whether criminal behavior mediates the associations of economic factors and social strains with recidivism tendency. Data were collected through a structured questionnaire and analyzed using Partial Least Squares Structural Equation Modelling (PLS-SEM). The measurement model displayed satisfactory reliability and validity. All five hypothesized direct associations were statistically significant, while criminal behavior partially mediated both pathways to recidivism tendency. The model explained 36.6% of the variance in criminal behavior and 52.9% in recidivism tendency, although PLSpredict indicated limited out-of-sample predictive performance. The findings support an integrated correctional approach addressing economic disadvantages, social pressures, behavioral patterns, and reintegration.
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Introduction

The literature on crime and recidivism tendency has developed through interactions among economic, social, and behavioral conditions. Becker's Economic Theory of Crime explains offending in terms of costs and benefits of legal and illegal activities, suggesting that limited economic opportunities may increase incentives for crime (Becker, 1968). General Strain Theory complements this perspective by explaining how adverse experiences, negative relationships, and failure to achieve goals can generate pressures that increase the likelihood of

deviant responses (Agnew, 2016). Together, these perspectives provide a basis for examining how economic disadvantage and social strain may be associated with criminal behavior and recidivism tendencies.

Empirical research has subsequently broadened General Strain Theory by examining social support, family dynamics, peer influence, discrimination, and psychological stress. In Pakistan, evidence among young offenders links harsh family environments and low support to street crime, confirming the theory's local relevance (Shahid et al., 2023). In correctional and post-release contexts, (Liu et al., 2021) similarly showed that financial distress and family neglect heighten post-release criminal propensity through the mediating role of depression. Similarly, recent work examines how different forms and characteristics of strain affect criminal involvement and the conditions under which individuals are more likely to respond through offending (Yang & Li, 2025). These studies demonstrate that crime cannot be understood only through material conditions; social and emotional experiences may shape how individuals respond to economic and social pressures.

Despite growing evidence on economic hardships, social strains, and recidivism tendency, three gaps remain. First, economic disadvantages and social strains are often examined separately rather than within an integrated framework (Gillani & Siddiqi, 2017). A prisoner after release may face unemployment, financial insecurity, family conflict, social rejection, discrimination, and limited community support (Shahid et al., 2023). Therefore, examining these conditions separately may only provide a partial understanding of the circumstances under which criminal behavior and recidivism tendency develop. Second, empirical evidence from the Pakistani prison populations remains limited, particularly in relation to post-offending and reintegration processes. While existing literature has provided valuable evidence concerning economic deprivation, social strains, rehabilitation, and reintegration, the literature remains fragmented across individual determinants and specific offender groups (Gillani & Siddiqi, 2017; Shahid et al., 2023; Shahzad et al., 2025; Akram et al., 2025). This limitation is important because Pakistan's socioeconomic and institutional realities may differ from those in Western settings dominating criminological literature, preventing the direct application of foreign findings to local prisoners. Third, less attention has been given to behavioral mechanisms through which economic and social conditions translate into recidivism tendency (Yukhnenko et al., 2024). While prior studies established links between economic hardships, social strains, criminal behavior, and recidivism, relatively less attention has been given to criminal behavior as a mediating pathway linking economic and social conditions with recidivism tendency (Marshall, 2025).

The study makes three main contributions. First, it integrates Becker's Economic Theory of Crime and Agnew's General Strain Theory into a unified explanation framework for recidivism tendency. Second, it provides empirical evidence from convicted prisoners in the Lahore Division, Pakistan, thereby extending criminological research to a developing-country correctional context. Third, it identifies criminal behavior as a behavioral mechanism linking economic factors and social strains to recidivism tendency, moving beyond models that consider these relationships only as direct effects. In the next section, the literature review is discussed.

Literature Review and Hypotheses

Economic Factors, Social Strains, Criminal Behavior and Recidivism Tendency

Economic deprivation is an important determinant of criminal behavior, and it can constrain access to legitimate employment and income while increasing financial pressure. Becker's framework suggests that when legitimate opportunities provide insufficient expected returns relative to illegal actions, the incentive to offend may increase (Becker, 1968). Empirical evidence has associated unemployment, poverty, income inequality, and financial instability with crime rates (Edmark, 2005; Lobont et al., 2017; Imran et al., 2018). Evidence from Pakistan likewise associates socioeconomic disadvantage with crime (Khan et al., 2015; Haider & Ali, 2015; Sheikh et al., 2022; Shahid et al., 2023). Accordingly, greater economic disadvantage is expected to be associated with criminal behavior.

Social strains such as family conflicts, peer rejection, discrimination, neighborhood disadvantage, and weak social support increase offending by generating emotional distress. Empirical research consistently validates the link between social strains and criminal behavior (Icli & Coban, 2012; Liu et al., 2021; Yang & Li, 2025). Recent Pakistani research indicates that family rejection, community discrimination, and limited social support contribute to both primary offending and recidivism tendency (Shah et al., 2024; Akram et al., 2025). According to General Strain Theory, persistent exposure to these stresses drives recidivism tendency. International studies consistently indicate that strong family support, positive social networks, and community acceptance reduce the likelihood of recidivism tendency, whereas social exclusion and discrimination significantly increase reoffending (Dadashazar, 2017; Liu et al., 2021; Marshall, 2025; Syasyila & Kamaluddin, 2025). Recent studies in Pakistan indicate that these social strains and stresses are associated with recidivism tendency (Akram et al., 2025). These studies suggest that supportive social environments facilitate lawful reintegration by improving emotional well-being and strengthening social bonds.

Criminal Behavior represents the behavioral outcome of individual choices made under adverse social and economic conditions. Persistent involvement in crime can become associated with repeat offending, particularly where rehabilitation, vocational preparation, and community reintegration are limited (Hannon & DeFina, 2010; Yukhnenko et al., 2024; Marshall, 2025). In Pakistan, evidence likewise associates criminal behavior with recidivism tendency (Akram et al., 2025). Therefore, based on theoretical and empirical evidence, criminal behavior is expected to be associated with recidivism tendency. It also mediates the relationships of economic factors and social strains with recidivism tendency.

Economic hardships may also be associated with recidivism tendency by affecting reintegration after imprisonment. Former prisoners frequently face a combination of unemployment, housing instability, financial insecurity, and limited access to legitimate employment opportunities, which complicates reintegration and increases the likelihood of reoffending (Gillani & Siddiqi, 2017; Sheikh et al., 2022; Shah et al., 2024). International evidence similarly links unemployment and

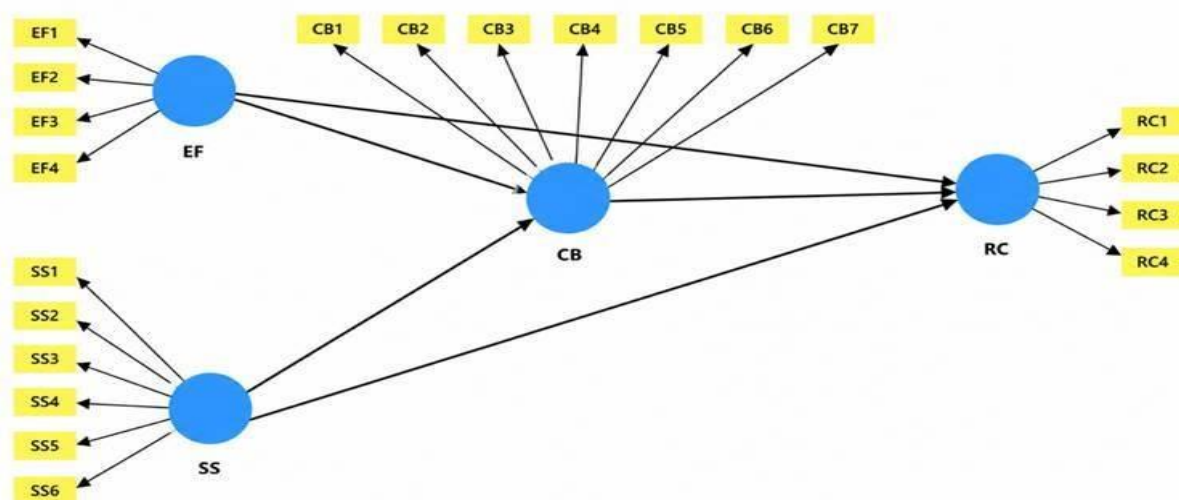
socioeconomic conditions with post-release outcomes (Dadashazar, 2017; Yukhnenko et al., 2019; Marshall, 2025). Thus, economic disadvantage may be directly associated with recidivism and indirectly with criminal behavior. Therefore, the study proposes the following hypotheses:

- H1: Economic Factors are significantly associated with Criminal Behavior
- H2: Economic Factors significantly influence Recidivism Tendency
- H3: Social Strains are significantly associated with Criminal Behavior
- H4: Social Strains are significantly associated with Recidivism Tendency
- H5: Criminal Behavior is significantly associated with Recidivism Tendency
- H6: Criminal Behavior mediates the link between Economic Factors and Recidivism Tendency
- H7: Criminal Behavior mediates the link between Social Strains and Recidivism Tendency

Conceptual Framework

The model contains four latent constructs: Economic Factors and Social Strains as exogenous variables, criminal behavior as the mediator, and Recidivism Tendency as the endogenous outcome. Economic factors and social strains are hypothesized to have direct associations with criminal behavior and recidivism tendency, while criminal behavior is expected to mediate both relationships.

Figure 1: Conceptual Framework



Note. EF = Economic Factors, SS = Social Strains, CB = Criminal Behavior, RC = Recidivism

Tendency. Source: Authors' conceptualization based on Becker (1968) and Agnew (2016).

Economic Factor (EF)

Economic factors are the conditions that affect any individual's access to legal means of earning a livelihood and meeting basic financial needs. In this study, these factors include unemployment, poverty, financial insecurity, inflationary pressures, and limited economic opportunities; all of these increase financial pressure and reduce the attractiveness or availability of legal economic alternatives. According to Becker's Economic Theory of Crime, persistent economic disadvantage may influence individuals' evaluation of the expected costs and benefits of legal and illegal activities, thereby increasing the likelihood of criminal involvement (Becker, 1968). Recent empirical research has continued to examine the relationship between economic disadvantage and criminal behavior, particularly in developing countries (Gillani & Siddiqi, 2017; Sheikh et al., 2022).

Economic Factors → Criminal Behavior

Economic Factors → Recidivism Tendency

Social Strains (SS)

Social strains are the adverse social and interpersonal conditions that generate pressure, frustration, conflict, or negative emotional experiences. Drawing on General Strain Theory, such strains may result from negative relationships, failure to achieve valued goals, loss of valued stimuli, and exposure to adverse social experiences. In the present study, social strains include family problems, peer influence, social exclusion, discrimination, and emotional stress, which may increase the likelihood of criminal behavior (Agnew, 2016). Recent empirical studies have further demonstrated the relevance of social and interpersonal strains to offending behavior and recidivism (Cvetan, 2015; Liu et al., 2021).

Social Strains → Criminal Behavior

Social Strains → Recidivism Tendency

Criminal Behavior (CB)

Criminal behavior is the pattern of attitudes, tendencies, and actions associated with involvement in unlawful activities, including consistency in offending and continued engagement in criminal activities. In this study, criminal behavior is conceptualized as a behavioral mechanism through which economic conditions and social strains may contribute to subsequent offending. This conceptualization is consistent with research examining persistent offending and behavioral pathways to recidivism tendency (Williams et al., 2012; Salis et al., 2025).

Criminal behavior = the behavioral tendency/pattern of offending.

Recidivism Tendency (RC)

Recidivism tendency is the repeated offending following an individual's previous involvement with the criminal justice system, such as conviction, imprisonment, or release (Yukhnenko et al., 2019). In this study, recidivism represents the tendency or experience of returning to criminal activity and subsequent contact with the criminal justice system. The concept is widely used in research examining repeated offending and post-release outcomes (Yukhnenko et al., 2019; Marshall, 2025).

Recidivism Tendency = the subsequent occurrence of repeated offending after previous involvement with the criminal justice system.

Methodology

Research Design, Population, Sampling, and Data Collection

The study employed a quantitative cross-sectional research design to examine the relationship among economic factors, social strains, criminal behavior, and recidivism tendency. The cross-sectional design captures respondents' reported experiences at one point in time and therefore does not establish temporal or causal relationships. The target population comprised convicted male prisoners in four facilities in Lahore Division, Punjab, Pakistan: Central Jail, Lahore, District Jail, Lahore, District Jail, Kasur, and District Jail, Sheikhpura. Lahore Division was selected due to its concentration of major correctional institutions that house a large and diverse inmate population representing different criminal backgrounds. To ensure data reliability, the sampling frame exclusively targeted convicted prisoners rather than under-trial detainees. Those convicted prisoners include first-time offenders and re-offenders. Precise prison population statistics and proportionate sample allocation parameters were obtained directly from the Inspector General of Prisons, Punjab. Purposive sampling technique was used because participation was restricted to convicted prisoners meeting the study criteria. A sample of 370 was determined using the Krejcie and Morgan sampling approach from a population of 9,927 and allocated proportionately across the four jails.

$$n = \frac{\chi^2 NP(1 - P)}{d^2(N - 1) + \chi^2 P(1 - P)}$$

n = Sample Size

$\chi^2 = 3.841$ (Table value of Chi-square for 5 % confidence level at 1 degree of freedom) N = 9927 (Population Size at the time of survey)

P = 0.50 (Population proportion, assumed to be 50% “)

d = 0.05 (Margin of error/ degree of accuracy)

$$n = \frac{(3.841)(9927)(0.50)(1 - 0.50)}{0.05(9927 - 1) + (3.841)(0.50)(1 - 0.50)}$$

A sample of 370 convicted prisoners was collected from four jails.

$$n = 370$$

Table 1: Jail-wise Sample Allocation of the Prisoners

Sr.No.	Name of the Jail	Total Convicted Prisoners	Sample Allocated (Nos)
1	Central Jail, Lahore	3738	3738/9927*370=140
2	District Jail, Lahore	3090	3090/9927*370=115
3	District Jail, Kasur	1066	1066/9927*370=40
4	District Jail, Sheikhpura	2033	2033/9927*370=75
Total		9927	370

Note Source: Authors' conceptualization based on Becker (1968) and Agnew (2016).

A total of 400 questionnaires were distributed; 380 were returned, and 10 cases with substantial missing data were excluded, producing 370 usable cases. Data were collected through face-to-face interviews from January to February 2020. Because many prisoners had limited literacy, trained team members read questions aloud and helped respondents understand the items. Permission was obtained from the Inspector General of Prisons, Punjab, Lahore vide Memo No. JB/G-I/2019/91275, dated December 2, 2019. Participation was voluntary, informed consent was obtained, and confidentiality was explained to respondents. They were informed that their data would be used only for academic research and that their data would be kept confidential. A pilot study involving 40 prisoners was conducted to assess the clarity and reliability, after which several items were reworded.

Measures and Operationalization

Measurement items were adopted from prior literature and modified for the Pakistani prison context while retaining their intended conceptual meaning. Economic Factors comprised unemployment/lack of income, poverty, income inequality, and inflation/financial hardships (four items) (Becker, 1968; Edmark, 2005; Tang et al., 2007; Chor Foon Tang, 2009; Khan et al., 2015; Imran et al., 2018). Social Strains comprised family conflict, negative life events, social rejection, lack of social support, community discrimination, and crime in the locality (six items) (Icli & Coban, 2012; Williams et al., 2012; Agnew, 2016). Criminal Behavior comprised unlawful activities for financial gain, repeat criminal involvement, criminal peers, response to economic hardships and social strains, persistence of a criminal lifestyle, and continued offending despite sanctions (seven items) (Becker, 1968; Williams et al., 2012; Agnew, 2016; Dadashazar, 2017). Recidivism Tendency comprised returning to crime after release because of employment difficulties, repeat offending associated with continued stress, reconviction associated with lack of social acceptance, and repeat imprisonment associated with financial strains (four items) (Hannon & DeFina, 2010; Williams et al., 2012; Dadashazar, 2017).

Recidivism tendency was measured through respondents' reported experiences and perceptions rather than longitudinal administrative records. Accordingly, it represents a self-reported tendency or experience of repeated offending, and the construct should be interpreted as recidivism tendency rather than objectively observed post-release recidivism.

Analytical Strategy

Data were analyzed using SmartPLS 4. PLS-SEM was employed because the model involves multiple latent constructs, direct paths, and mediation. It permits simultaneous assessment of the measurement and structural models and provides estimates of explanatory and predictive performance (Hair et al., 2022; Hair et al., 2024). The measurement model was assessed through outer loadings, Cronbach's alpha, rho_A, composite reliability, Average Variance Extracted (AVE), the Fornell–Larcker criterion, and the Heterotrait–Monotrait ratio (HTMT). The structural model was assessed using standardized path coefficients, bootstrapped significance tests with 5,000 subsamples, R², f², mediation effects, and PLSpredict. Statistical significance was evaluated using p-values, bootstrap confidence intervals, and t-values. Because all constructs were measured using one questionnaire, common method bias was examined using Harman's single-factor test. The manuscript's original analysis reported that the first factor accounted for less than 50% of the total variance. This result is retained as a diagnostic, but it should not be interpreted as definitive proof that common method bias is absent. The cross-sectional and self-report nature of the data remains an important limitation.

Results

Measurement Model

Table 2 reports that all indicator loadings exceeded 0.70, ranging from 0.723 to 0.821, indicating satisfactory indicator reliability. Cronbach's Alpha ranged from 0.785 to 0.881, rho_A from 0.788 to 0.881, composite reliability ranged from 0.861 to 0.907, and from 0.568 to 0.630. These values support internal consistency and convergent validity.

Table 2. Reliability and Convergent Validity

Construct	Cronbach's Alpha	Composite reliability(rho_A)	Composite reliability(rho_c)	Average variance extracted (AVE)
Economic factors	0.785	0.788	0.861	0.608
Social strains	0.848	0.853	0.888	0.568
Criminal Behavior	0.881	0.881	0.907	0.583
Recidivism Tendency	0.804	0.81	0.872	0.63

Note: Cronbach 's alpha, composite reliability, average variance extracted (AVE). Authors' calculations.

Table 3 reports Fornell–Larcker criterion was satisfied because the square root of AVE for each construct exceeded its correlations with the other constructs. This indicates that each construct

shares greater variance with its own indicators than with other constructs, providing evidence of satisfactory discriminant validity.

Table 3. Fornell–Larcker Criterion

Construct	EF	SS	CB	RC
Economic factors	0.78			
Social strains	-0.013	0.754		
Criminal Behavior	0.468	0.377	0.764	
Recidivism Tendency	0.45	0.341	0.706	0.794

Note: Diagonal values represent the square roots of AVE; off-diagonal values show correlations among constructs. Authors' calculation.

Table 4 reports that all HTMT values ranged from 0.071 to 0.832 and were below the recommended threshold of 0.85, providing evidence of discriminant validity.

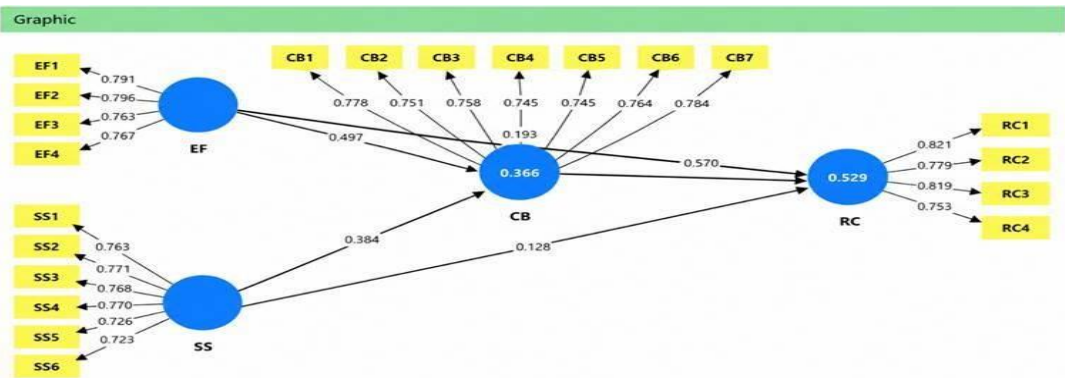
Table 4. HTMT Values

Constructs	CB	EF	RC	SS
CB				
EF	0.558			
RC	0.832	0.560		
SS	0.431	0.071	0.409	

Note: Authors' calculations.

Structural Model and Hypotheses Testing

Figure 2. Structural model with standardized path coefficients and R² values.



Note. EF = Economic Factors, SS = Social Strains, CB = Criminal Behavior, RC = Recidivism Tendency. Source: Authors' conceptualization based on Becker (1968) and Agnew (2016).

The structural model was specified as:

$$CB = \beta_1 EF + \beta_2 SS + \varepsilon_1$$

$$RC = \beta_3 EF + \beta_4 SS + \beta_5 CB + \varepsilon_2$$

Bootstrapping with 5,000 subsamples was used to test the hypothesized direct relationships.

Table 5. Structural Model and Hypothesis Testing

Hypothesis	Structural Path	β	t-value	p-value	95% CI	Decision
H1	EF $\rightarrow$ CB	0.497	10.57	< .001	[0.404, 0.589]	Supported
H2	EF $\rightarrow$ RC	0.193	3.57	< .001	[0.086, 0.295]	Supported
H3	SS $\rightarrow$ CB	0.384	8.73	< .001	[0.298, 0.471]	Supported
H4	SS $\rightarrow$ RC	0.128	2.91	0.004	[0.040, 0.216]	Supported
H5	CB $\rightarrow$ RC	0.57	11.18	< .001	[0.471, 0.670]	Supported

Note. EF = Economic Factors, SS = Social Strains, CB = Criminal Behavior, RC = Recidivism Tendency. Source: Authors' conceptualization based on Becker (1968) and Agnew (2016).

Table 5 presents that all five hypothesized direct relationships were positive and statistically significant. Economic factors were positively associated with Criminal behavior ($\beta = 0.497$, $t = 10.57$, $p < .001$) and with Recidivism Tendency ($\beta = 0.193$, $t = 3.57$, $p < .001$). Social Strains were positively associated with Criminal behavior ($\beta = 0.384$, $t = 8.73$, $p < .001$) and Recidivism Tendency ($\beta = 0.128$, $t = 2.91$, $p = .004$). Criminal Behavior had the strongest direct association with Recidivism Tendency ($\beta = 0.570$, $t = 11.18$, $p < .001$). All 95% confidence intervals exclude zero; H1–H5 are supported.

Mediation, Explanatory Power, Effect Sizes, and Prediction

Table 6 Mediation Analysis

Hyp.	Indirect path	Indirect β	T	p	95% CI	Direct β	Type
H6	EF $\rightarrow$ CB $\rightarrow$ RC	0.283	7.64	< .001	[0.210, .362]	0.193	Partial/complementary
H7	SS $\rightarrow$ CB $\rightarrow$ RC	0.219	6.82	< .001	[0.156, .288]	0.128	Partial/complementary

Note. EF = Economic Factors; SS = Social Strains; CB = Criminal Behavior; RC = Recidivism Tendency. β = standardized indirect effect; β' = direct effect; CI = confidence interval. Mediation is considered complementary (partial) because both the indirect and direct effects are statistically significant and operate in the same positive direction

Table 6 reported that both indirect effects were significant and their confidence intervals excluded zero. Because the corresponding direct effects also remained significant and were in the same positive direction, the results support partial, complementary mediation. The indirect effect of Economic Factors through Criminal Behavior was 0.283, while that of Social Strains was 0.219.

Coefficient of Determination

Table 7. Coefficient of Determination

Endogenous construct	R ²	Adjusted R ²
Criminal Behavior	0.366	0.363
Recidivism Tendency	0.529	0.525

Table 7 reported that the model explained 36.6% of the variance in Criminal Behavior and 52.9% in Recidivism Tendency. These values indicate moderate explanatory power under commonly used PLS-SEM guidelines.

Effect Size (f^2)

The contribution of each exogenous construct was measured using Cohen's effect size (f^2).

Table 8. Effect Size

Path	f^2	Interpretation
Economic factors → Criminal Behavior	0.353	Large
Social strains → Criminal Behavior	0.232	Medium
Criminal Behavior → Recidivism	0.439	Large
Economic factors → Recidivism	0.053	Small
Social strains → Recidivism	0.028	Small

Note: f^2 = effect size. Authors' calculations.

In Table 8, the effect size of Economic Factors demonstrated a large effect on criminal behavior ($f^2 = 0.353$), Social Strains a medium effect on criminal behavior ($f^2 = 0.232$), and Criminal behavior a largest effect on Recidivism Tendency ($f^2 = 0.439$). The direct effects of Economic Factors ($f^2 = 0.053$) and Social Strains ($f^2 = 0.028$) were small.

PLSpredict

Table 9. PLSpredict Results

Endogenous Indicator	Q ² _{predict}	PLS-SEMRMSE	LMRMSE	PLS-SEM vs. LM
CB1	-0.261	0.5	0.391	Higher
CB2	-0.239	0.513	0.409	Higher
CB3	-0.253	0.511	0.404	Higher
CB4	-0.248	0.502	0.41	Higher
CB5	-0.283	0.503	0.413	Higher
CB6	-0.292	0.517	0.42	Higher
CB7	-0.275	0.524	0.408	Higher

RC1	-0.256	0.515	0.409	Higher
RC2	-0.252	0.513	0.424	Higher
RC3	-0.265	0.496	0.394	Higher
RC4	-0.223	0.499	0.419	Higher

The negative Q^2 predict values and higher PLS-SEMRMSE values relative to the LM benchmark indicate limited out-of-sample predictive performance.

In Table 9, all Q^2 predict values were negative (−0.223 to −0.292), and the PLS-SEM RMSE exceeded the linear-model benchmark for every indicator. The model, therefore, demonstrated limited out-of-sample predictive performance despite its explanatory power.

SRMR

Table 10. SRMR

Model Fit Measure	Value	Recommended Threshold	Assessment
SRMR	0.061	< 0.08	Acceptable

Note: SRMR = Standardized Root Mean Square Residual

In Table 10, the SRMR was 0.061, below the commonly used 0.08 threshold, providing supplementary evidence of acceptable approximate

Discussion

The findings provide evidence that economic factors and social strains are positively associated with criminal behavior and recidivism tendency among convicted male prisoners in Lahore Division. They also show that criminal behavior has the strongest direct association with recidivism tendency and provides a significant pathway through which economic and social conditions are associated with recidivism tendency. These results are broadly consistent with the theoretical expectations of Becker’s Economic Theory of Crime and Agnew’s General Strain Theory.

The positive association between economic factors and criminal behavior ($\beta = 0.497$) supports the proposition that economic disadvantage is relevant to offending where legitimate opportunities are constrained. This is consistent with evidence linking unemployment, poverty, income inequality, inflation, and financial insecurity with criminal involvement, particularly where legitimate economic opportunities are constrained (Edmark, 2005; Imran et al., 2018; Lobonj et al., 2017) and with Pakistani evidence on socioeconomic determinants of crime (Khan et al., 2015; Ali, 2016; Gillani & Siddiqi, 2017; Sheikh et al., 2022). The finding does not establish that poverty causes offending; rather, it indicates that the economic conditions represented by the construct are positively associated with criminal behavior in this sample.

Economic Factors had a significant direct association with Recidivism Tendency ($\beta = 0.193$),

although the effect was smaller than the association with Criminal Behavior. This pattern is compatible with the view that economic disadvantage can affect reintegration while also operating through behavioral pathways. Limited employment and financial insecurity may make lawful adjustment more difficult after imprisonment (Gillani & Siddiqi, 2017; Yukhnenko et al., 2024).

The relationship between Social Strains and Criminal Behavior ($\beta = 0.384$) is consistent with General Strain Theory. Family conflict, negative experiences, social rejection, discrimination, social exclusion, and weak social support may create pressures that are associated with offending behavior. The significant association with Recidivism Tendency ($\beta = 0.128$) further suggests that social conditions remain relevant to reintegration. These results are consistent with research emphasizing family, social support, and reentry strain (Icli & Coban, 2012; Liu et al., 2021; Akram et al., 2025; Marshall, 2025; Syasyila & Kamaluddin, 2025).

Criminal Behavior had the strongest direct association with Recidivism Tendency ($\beta = 0.570$; $f^2 = 0.439$). This result supports the behavioral component of the proposed framework and suggests that persistent criminal behavior is an important predictor of recidivism tendency. Recent systematic and longitudinal research has continued to identify behavioral and post-release characteristics as important correlates of recidivism tendency (Yukhnenko et al., 2024; Marshall, 2025). Evidence from Pakistan also suggests that inadequate rehabilitation, limited vocational preparation, and weak reintegration mechanisms can make it difficult for prisoners to disengage from established criminal patterns (Akram et al., 2025).

The mediation results are the central contribution of the study. Criminal behavior significantly mediated the association of Economic Factors and Social Strains with Recidivism Tendency, while both direct effects remained significant. The findings therefore support complementary partial mediation rather than full mediation. In theoretical terms, the findings integrated Becker's economic perspectives with Agnew's perspective through criminal behavior as an intervening mechanism. Thus, economic disadvantage may constrain legitimate opportunities, social strain may increase pressure and weaken coping resources, and criminal behavior may provide a pathway through which these conditions are associated with subsequent offending. The results should nevertheless be interpreted as associative because the cross-sectional design cannot establish temporal ordering.

Theoretical, Practical, and Policy Implications

Theoretically, the study integrates Becker's Economic Theory of Crime and Agnew's General Strain Theory in a single framework and extends their application to a Pakistani correctional context. The mediation results add a behavioral mechanism rather than treating economic and social conditions as isolated predictors. The findings therefore suggest that the explanations of recidivism tendency can benefit from considering structural conditions and behavioral processes together.

For correctional policy, rehabilitation should address economic, social, and behavioral conditions simultaneously rather than relying exclusively on imprisonment or punishment. Vocational training, employability programs, employment preparation, and job-placement partnerships could improve access to legitimate income opportunities after release. Behavioral rehabilitation programs should address persistent criminal behavioral patterns through structured counseling, decision-making and coping skills, and interventions aimed at persistent offending patterns. Social reintegration should include family counseling, community-based support, and initiatives addressing stigma and social rejection. Reintegration services should ideally begin before release and continue after release to provide continuity of support.

The findings also support coordinated rather than isolated interventions. Employment support may be less effective when family rejection or behavioral problems remain unaddressed, while behavioral programs may be weakened when prisoners return to severe economic insecurity. A coordinated reintegration framework linking employment assistance, behavioral rehabilitation, family and community support, and appropriate post-release supervision may therefore be more consistent with the integration model tested in the study.

Limitations and Future Research

The study has several limitations that should be considered when interpreting its findings. First, the cross-sectional research design limits the ability to establish temporal or causal relationships among economic factors, social strains, criminal behavior, and recidivism tendency. Longitudinal research following prisoners before and after release would provide stronger evidence about whether changes in economic and social conditions preceded changes in criminal behavior and recidivism tendency. Second, the study was conducted among male convicted prisoners from four jails in Lahore Division. Therefore, the findings may not be generalizable to prisoners in other regions of Pakistan, female prisoners, juveniles, or other offender populations.

Third, the study relied on self-reported information, which may be affected by social desirability concerns, recall problems, or respondents' willingness to disclose sensitive experiences. In addition, recidivism was measured through respondents' reported perceptions and experiences rather than longitudinal administrative records. Therefore, the construct should be interpreted as an indicator of recidivism tendency rather than objectively observed post-release recidivism. Future studies should combine survey responses with official criminal justice records where ethically and practically feasible.

Fourth, the model does not include potentially relevant factors such as mental health, substance use, prison conditions, rehabilitation quality, family cohesion, community acceptance, and post-release supervision. Future research could incorporate these variables and examine whether they strengthen the explanatory and predictive performance of the model. Longitudinal, multi-site, and comparative studies would also improve the generalizability of the findings. Finally, the negative PLSpredict results indicate that future models should place greater emphasis on out-of-sample prediction and model validation.

Conclusion

The study examined the associations among Economic Factors, Social Strains, Criminal Behavior, and Recidivism Tendency among 370 convicted male prisoners in Lahore Division. Economic Factors and Social Strains were positively associated with Criminal Behavior and Recidivism Tendency, and Criminal Behavior had the strongest direct association with Recidivism Tendency, partially mediating both pathways. These findings support an integrated perspective linking economic opportunity, social conditions, behavioral rehabilitation, and reintegration. The study contributes evidence from the Pakistani correctional context, while its cross-sectional self-reported design requires cautious interpretation. The model showed meaningful explanatory power but limited out-of-sample predictive performance. Overall, the findings support correctional strategies that combine economic reintegration, social support, and behavioral rehabilitation rather than relying on punishment alone.

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