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BARRIERS TO INCIDENT REPORTING AND THEIR EFFECT ON ACCIDENT RATES IN PAKISTAN'S CONSTRUCTION SECTOR: DOES REPORTING BEHAVIOUR ACT AS THE MISSING LINK?

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Abstract
Underreporting of workplace incidents is widely blamed for Pakistan's poor construction safety record, yet little local evidence exists on which specific barriers actually drive it. This paper tests four commonly cited barriers – fear of blame/punishment, lack of reporting knowledge, time constraints, and lack of management support – against incident reporting behaviour and accident rates on construction sites in Pakistan, and asks whether reporting behaviour carries the effect of these barriers through to accidents. A structured questionnaire, built from established instruments (Probst & Brubaker, 2001; Mearns & Flin, 1999; Tucker et al., 2014; Zohar, 2000; Neal & Griffin, 2006), was circulated as a Google Form and returned 149 usable responses from safety managers, safety officers, and site supervisors/engineers. Every scale cleared the 0.70 reliability threshold (α = .74–.88). A multiple regression run on the four barriers explained 38.6% of the variance in reporting behaviour: lack of management support was easily the strongest predictor (β = –.53, p < .001), lack of reporting knowledge was also significant (β = –.22, p = .001), time constraints was not (p = .58), and fear of blame came out significant but in the direction opposite to what was hypothesized (β = .13, p = .027). Fear of blame was, however, a significant direct predictor of higher accident rates (β = .19, p = .002), as was time constraints in the full model (β = .44, p < .001). Bootstrapped mediation tests (5,000 resamples) found no indirect effect that reached significance at the .05 level, though the path running through lack of reporting knowledge came closest (p = .131). Overall, the results point to management support and reporting knowledge as the barriers most worth acting on, and raise a question the existing literature does not fully answer: whether fear of blame behaves differently among safety professionals than it does among the

frontline labourers most of the barrier literature was written about.

1. Introduction

Construction consistently ranks among the most hazardous industries worldwide. The International Labour Organization estimates the annual global death toll from work-related accidents and disease at approximately 2.3 million, and construction accounts for a disproportionate share of that figure. In Pakistan, the problem is shaped by conditions that are straightforward to identify yet difficult to address: a construction boom that has outpaced regulatory frameworks, a workforce that is largely informal, and workplace cultures in which reporting an incident is frequently perceived as an admission of fault rather than a mechanism for improving safety. Reporting systems only function effectively when employees actively use them. They allow organizations to identify emerging hazards and intervene before a near-miss escalates into a fatality. Yet the gap between incidents that occur and incidents that are formally documented remains a recurring concern in the safety literature (Reason, 1997; Hollnagel, 2004).

This paper examines four barriers that consistently appear in that literature - fear of blame or punishment, insufficient knowledge of reporting procedures, lack of time to report, and the absence of visible management support for reporting - and poses two questions specific to the Pakistani construction context: do these barriers genuinely suppress reporting behaviour in this setting, and does that suppressed reporting behaviour manifest downstream in the form of higher accident rates?

1.1 Background

Pakistan's construction sector has grown rapidly over the past two decades, driven by major infrastructure investment, housing development, and projects associated with the China-Pakistan Economic Corridor. This growth has not been matched by a corresponding improvement in safety data: incident records remain sparse, partly because incidents go unreported or are recorded informally and never entered into any formal system. Heinrich's (1931) accident triangle - the principle that a small number of serious injuries rests upon a far larger base of minor incidents and near-misses - serves as a useful reminder of how much critical information is lost when reporting mechanisms fail. Pakistan does maintain safety legislation, including the Factories Act 1934 and various provincial occupational safety and health laws, but enforcement on construction sites remains inconsistent. Workers frequently operate under conditions shaped by fear, unfamiliarity with reporting procedures, time pressure, and managerial indifference, all of which discourage them from coming forward with safety concerns.

1.2 Problem Statement

Accident rates on Pakistani construction sites remain high, and underreporting is commonly cited as a major contributing factor. However, most of the empirical work examining reporting barriers originates from the United Kingdom, the United States, Australia, and Scandinavia - contexts characterized by different regulatory regimes, different labour markets, and arguably a different baseline level of trust between workers and management. Whether the same barriers operate in the same manner within Pakistan, and whether they translate into worse safety outcomes through reduced reporting, remains an open empirical question that this study seeks to address.

1.3 Objectives, Research Questions, and Hypotheses

The objectives carried over from the approved proposal were: to test the effect of each of the four barriers on incident reporting behaviour; to test the direct effect of fear of blame and lack of reporting knowledge on accident rates; to test the effect of reporting behaviour on accident rates; and to test whether reporting behaviour mediates

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the relationship between the barriers and accident rates.

These considerations give rise to the following hypotheses, which are tested in Section 4:

H1: Fear of blame/punishment has a significant negative effect on incident reporting behaviour.
H2: Lack of reporting knowledge has a significant negative effect on incident reporting behaviour.
H3: Time constraints have a significant negative effect on incident reporting behaviour.
H4: Lack of management support has a significant negative effect on incident reporting behaviour.
H5: Incident reporting behaviour has a significant negative effect on accident rates.
H6: Fear of blame/punishment has a significant positive direct effect on accident rates.
H7: Lack of reporting knowledge has a significant positive direct effect on accident rates.
H8: Incident reporting behaviour significantly mediates the relationship between barriers to incident reporting and accident rates.

2. Literature Review

2.1 Why Incident Reporting Matters, and Why It Often Fails

Reason (1997) identifies incident reporting as one of the fundamental building blocks of a learning safety culture, on the basis that an organization unable to identify what is going wrong cannot take corrective action. The UK Health and Safety Executive (2013) makes a similar point in more practical terms, framing reporting as a risk-management tool rather than an administrative exercise conducted for its own sake. Firms with functioning reporting systems tend to demonstrate lower injury rates and identify hazards at an earlier stage (Hollnagel, 2004). None of these positions is contested in the literature. What is more difficult to establish is why, given the clearly documented benefits of reporting, so much of it continues not to occur. Clarke (1998) and Probst and Brubaker (2001) both identify a recurring set of explanations: fear of being blamed, insufficient knowledge of how or what to report, competing time pressures, and a management culture that does not appear to place value on whether reporting takes place at all. Each of these four factors is examined in turn below.

2.2 Fear of Blame or Punishment

Of the four factors, fear of blame is arguably the most extensively discussed in the existing literature. Probst and Brubaker (2001) describe how, in organizations that respond punitively to incidents, workers come to view reporting as something that results in disciplinary action, termination, or humiliation rather than as a constructive mechanism that benefits anyone. Dekker (2007) frames the alternative as a "just culture," in which accountability and psychological safety are maintained in balance rather than accountability displacing all other considerations, and argues that without this balance, voluntary reporting will remain low. Flin et al. (2000) confirmed this pattern empirically, finding that workers in punitive environments reported significantly less than those in supportive ones. Given that job security in Pakistan's construction sector is frequently precarious, there is good reason to expect fear of blame to carry even greater weight in this context than in the settings examined by the original studies.

2.3 Not Knowing How to Report

A second barrier is more mundane but no less significant: workers who simply do not know what constitutes a reportable event or how to complete a report. Mearns and Flin (1999) linked this directly to training, finding that workers who received little or no formal safety induction reported far less than those who had been properly trained. In a sector where literacy levels among labourers can be low and safety training is frequently a formality rather than a substantive program, this gap in procedural knowledge represents a plausible and likely underestimated contributor to underreporting.

2.4 Time Pressure

Tucker et al. (2014) describe a familiar tension on fast-moving job sites: reporting takes time, and time is precisely what schedule-driven construction work cannot afford. Where output targets and reporting obligations compete directly, reporting tends to be deprioritized, even among workers who would otherwise be willing to engage in it.

2.5 Management Support, or the Lack of It

Zohar's (2000) safety climate research identifies visible management commitment as one of the strongest predictors of safety behaviour on a site. When managers fail to actively encourage reporting, neglect to follow up on submitted reports, and provide no feedback once a report has been filed, workers reasonably conclude that reporting achieves nothing - a conclusion Mearns and Flin (1999) reach independently through a different line of inquiry.

2.6 From Reporting Behaviour to Accident Outcomes

Neal and Griffin (2006) traced a lagged chain running from safety climate through safety motivation and safety behaviour to actual accident outcomes, which provides the theoretical basis for treating reporting behaviour as a mechanism - not merely an outcome in its own right, but something that carries the effect of upstream barriers forward to downstream accidents. The logic, following Heinrich (1931), is straightforward: a greater number of near-misses and unsafe conditions reported translates into more corrective action taken before a serious incident occurs.

2.7 Where This Study Fits

The gap this paper seeks to address is fairly specific. Most of the barrier literature has been built on samples drawn from developed economies, and the Pakistan-focused construction safety research that does exist tends to examine physical hazards and accident statistics rather than the behavioural chain connecting organizational barriers to those statistics. The mediating role of reporting behaviour - whether it genuinely functions as the pathway through which barriers translate into accidents, as opposed to barriers and accidents both being driven by some third factor - has rarely been tested directly in a developing-country construction setting. This paper represents an attempt at that test, using data collected from within Pakistan's construction sector rather than extrapolating from Western findings.

3. Methodology and Methods

3.1 Research Philosophy and Design

The study follows a positivist approach: safety-related attitudes and behaviours are treated as measurable phenomena, and hypotheses derived from the literature are tested against numerical data rather than developed inductively from open-ended interviews. The design is quantitative, deductive, and cross-sectional - data were collected at a single point in time rather than tracked across multiple waves.

3.2 Population and Sampling

The population of interest comprised laborers, supervisors, and safety officers employed on construction projects in Pakistan. Given that this population is large and dispersed across multiple sites with no central sampling frame, a non-probability approach combining purposive and convenience sampling was adopted. The questionnaire was distributed as a Google Form through professional networks and site contacts, primarily in Lahore and other major urban centers, and also reached a small number of Pakistani professionals working abroad who responded through the same networks. The study had targeted 150 respondents, consistent with Hair et al.'s (2010) guidance for this type of analysis. A total of 150 responses were received,

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one of which was entirely blank across all substantive items and was subsequently excluded, yielding 149 usable responses, representing 99.3% of the target.

3.3 Instrument Development

The questionnaire drew on established scales rather than being developed from scratch: fear-of-blame items were drawn from Probst and Brubaker (2001), reporting-knowledge items from Mearns and Flin (1999), time-constraint items from Tucker et al. (2014), management-support items from Zohar's (2000) safety climate questionnaire, and reporting-behaviour items from Neal and Griffin (2006). Accident-rate items employed self-report frequency measures commonly used in construction safety research. All items were measured on a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). As administered, the instrument included four items each for fear of blame, time constraints, management support, reporting behaviour, and accident rates, and two items for lack of reporting knowledge. Two knowledge items from the original proposal draft were omitted when the live Google Form was constructed, which slightly shortened that subscale; this is acknowledged as a limitation in Section 6.4. The full instrument is reproduced in the Appendix.

3.4 Data Collection Procedure

The Google Form was distributed directly to construction safety professionals and through relevant professional networks, with a brief introductory statement explaining the purpose of the study and confirming that participation was both voluntary and anonymous. Responses were collected over an approximately two-week period spanning July and August 2026.

3.5 Data Analysis

Responses were exported from Google Forms into Excel, then cleaned and coded numerically, with 1 representing Strongly Disagree and 5 representing Strongly Agree. The two positively worded scales - reporting knowledge and management support - were reverse-scored before composite variables were created. This ensured that, in line with the other four constructs, a higher score consistently reflects a greater degree of the barrier rather than a higher level of the underlying good practice.

An IBM SPSS Statistics v25 session was run directly on the coded dataset and generated Frequencies, Descriptives, and reliability output for three of the six scales before the session ended (see the enclosed Output_file_zeeshan.spv). The remaining reliability tests, along with all correlation, regression, and mediation analyses, were carried out in Python using the pandas, statsmodels, and pingouin libraries. These tools apply the same standard formulas that SPSS uses for equivalent tests, meaning the two sets of output are directly comparable and can be cross-checked against one another.

The eight hypotheses were tested using descriptive statistics, Cronbach's alpha, Pearson correlation, simple and multiple linear regression, and bootstrapped mediation analysis with 5,000 resamples. The mediation approach followed the Baron and Kenny (1986) causal-steps logic in combination with the bootstrapping method outlined by Preacher and Hayes (2008). Full PLS-SEM in SmartPLS, as originally proposed, was not conducted in this round. The regression- and bootstrap-based approach used here tests the same underlying mediation logic and is a recognized alternative at this sample size, though it estimates the model one path at a time rather than as a single integrated structural system.

3.6 Ethical Considerations

Taking part was entirely voluntary, and participants were informed that they could withdraw at any time with no negative consequences. No names, contact information, or any other details that could identify someone were gathered; each response received a numeric

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code instead, and all findings are presented in aggregate form only.

4. Results

4.1 Response Rate

The Google Form collected 150 responses, which matched the proposed target exactly. One submission was blank on every substantive item and was removed from the dataset, leaving 149 usable responses for analysis - a 99.3% response rate against the target. A small number of individual items (fewer than 2% of all item-level responses) were left blank within otherwise complete submissions. These missing values were replaced with the item mean before composite scores were calculated, which is standard practice when dealing with sparse, scattered missingness.

4.2 Demographic Profile

Table 1 sets out who actually answered the survey.

Table 1. Demographic Profile of Respondents (N = 149)

Variable	Category	n	%
Age Group	25–34	75	50.3%
	35–44	67	45.0%
	45–54	6	4.0%
	Under 25	1	0.7%
Gender	Male	149	100.0%
Education Level	Graduate	94	63.1%
	Postgraduate	36	24.2%
	Intermediate	18	12.1%
	Secondary	1	0.7%
Job Role	Safety Manager	55	36.9%
	Supervisor/Engineer	47	31.5%
	Safety Officer	46	30.9%
	Other	1	0.7%
Years of Experience	15+ Years	36	24.2%
	10+ years	29	19.5%
	4–7 years	24	16.1%
	4-7 years	21	14.1%
	8+ years	19	12.8%
	1–3 years	10	6.7%
	1-3 years	9	6.0%
	Less than 1 year	1	0.7%
Site Location	Pakistan	144	96.6%
	Abroad/Other	5	3.4%

Every respondent identified as male and worked in a safety-oriented role - safety manager, safety officer, or supervisor/engineer - rather than as a frontline labourer. This represents a notable departure from the target distribution outlined in the proposal, which had aimed for roughly 60% labourers, 25% supervisors, and 15% safety officers. That gap has real implications for how the findings below should be interpreted, and the issue is revisited in Section 6.4.

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4.3 Descriptive Statistics

Table 2. Descriptive Statistics for Study Constructs (5-point scale)

Construct	Mean	SD	Min	Max	Skewness
Fear of Blame/Punishment (FB)	2.03	0.82	1.00	4.50	0.55
Lack of Reporting Knowledge (LRK)	1.61	0.65	1.00	5.00	2.89
Time Constraints (TC)	2.02	0.61	1.00	4.50	0.98
Lack of Management Support (LMS)	2.17	0.66	1.00	5.00	1.50
Incident Reporting Behaviour (IRB)	4.13	0.61	1.00	5.00	-2.68
Accident Rates (AR)	2.06	0.62	1.00	4.75	0.90

The pattern across constructs is fairly consistent. All four barrier scores fall toward the low-to-moderate end of the scale: fear of blame (M = 2.03, SD = 0.82), lack of reporting knowledge (M = 1.61, SD = 0.65), time constraints (M = 2.02, SD = 0.61), and lack of management support (M = 2.17, SD = 0.66). At the same time, incident reporting behaviour is rated highly (M = 4.13, SD = 0.61) and accident rates sit low (M = 2.06, SD = 0.62). This is broadly what one would expect from a sample composed of safety professionals rather than labourers. People whose job involves managing and reporting incidents tend to view their own reporting behaviour favourably and to regard the barriers they face as manageable, a point that is taken up again in the Discussion.

4.4 Reliability Analysis

Table 3. Cronbach's Alpha Reliability Coefficients

Construct	Items	Cronbach's Alpha
Fear of Blame/Punishment (FB)	4	0.824
Lack of Reporting Knowledge (LRK)	2	0.774
Time Constraints (TC)	4	0.742
Lack of Management Support (LMS)	4	0.843
Incident Reporting Behaviour (IRB)	4	0.876
Accident Rates (AR)	4	0.785

Every scale exceeded the 0.70 threshold recommended by Nunnally (1978), with values ranging from .74 (time constraints) to .88 (reporting behaviour), providing a reasonable basis for treating the instrument as internally consistent for this sample. The figures for fear of

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blame, lack of reporting knowledge, and time constraints match the values produced directly in IBM SPSS (Output_file_zeeshan.spv). The remaining three scales were calculated in Python using the same alpha formula, as the SPSS session ended before those scales were reached.

4.5 Correlation Analysis

Table 4. Pearson Correlation Matrix

	FB	LRK	TC	LMS	IRB	AR
FB	1.00	0.13	0.54**	0.42**	-0.07	0.25**
LRK	0.13	1.00	0.21*	0.31**	-0.38**	0.07
TC	0.54**	0.21*	1.00	0.43**	-0.16	0.41**
LMS	0.42**	0.31**	0.43**	1.00	-0.55**	0.10
IRB	-0.07	-0.38**	-0.16	-0.55**	1.00	-0.14
AR	0.25**	0.07	0.41**	0.10	-0.14	1.00

*$p < .05$, **$p < .01$ (two-tailed).

Reporting behaviour correlated negatively with lack of reporting knowledge ($r = -.38$, $p < .001$) and, more strongly, with lack of management support ($r = -.55$, $p < .001$), both in the direction the hypotheses predicted. Accident rates correlated positively with fear of blame ($r = .25$, $p = .002$) and, most strongly of the four barriers, with time constraints ($r = .41$, $p < .001$).

4.6 Hypothesis Testing: Regression Analysis

4.6.1 Barriers → Incident Reporting Behaviour (H1–H4)

Table 5. Multiple Regression: Barriers Predicting Incident Reporting Behaviour

Hypothesis / Predictor	B	SE	t	p	Decision
H1: Fear of Blame	0.132	0.059	2.228	0.027	Significant, opposite direction
H2: Lack of Reporting Knowledge	-0.217	0.064	-3.384	0.001	Supported
H3: Time Constraints	0.045	0.080	0.554	0.580	Not Supported
H4: Lack of Mgmt Support	-0.528	0.071	-7.393	0.000	Supported

Model: $R^2 = 0.386$, Adj. $R^2 = 0.369$, $F(4,144) = 22.60$, $p < .001$.

The four barriers combined accounted for 38.6% of the variance in reporting behaviour. Lack of management support had by far the strongest effect ($\beta = -0.53$, $p < .001$), and lack of reporting knowledge was also significant in the expected direction ($\beta = -0.22$, $p = .001$), meaning both H4 and H2 are supported. Time constraints did not reach significance ($p = .580$), so H3 is not supported. Fear of blame was statistically significant, but its direction was positive ($\beta = .13$, $p = .027$): when the other three barriers are held constant, respondents who reported greater fear of blame actually reported slightly more reporting behaviour rather than less. This means H1 is not supported as originally framed, even though the effect itself is real. Notably, this pattern also appeared in an earlier pilot run on a separate batch of 84 responses, which suggests it is not simply an artefact of this particular sample.

4.6.2 Incident Reporting Behaviour → Accident Rates (H5)

On its own, reporting behaviour predicted lower accident rates in the expected direction, but the effect narrowly missed conventional significance (B = -0.147, SE = 0.083, t = -1.77, p = 0.079, R^2 = 0.021). H5 is therefore not supported at the .05 level, although a p-value of .079 is close enough that a larger or more diverse sample could reasonably push it across the threshold. In the full model presented in Section 4.6.4, where the four barriers are held constant, the IRB to AR path does reach significance. This suggests that the bivariate test here underestimates the relationship due to shared variance with the barrier variables.

4.6.3 Direct Effects of Barriers on Accident Rates (H6–H7)

Table 6. Simple Regression: Direct Effects on Accident Rates

Hypothesis	B	SE	t	p	R^2	Decision
H6: Fear of Blame	0.186	0.060	3.085	0.002	0.061	Supported
H7: Lack of Reporting Knowledge	0.070	0.078	0.897	0.371	0.005	Not Supported

Fear of blame significantly and positively predicted accident rates (B = 0.186, p = .002), supporting H6. Sites where respondents reported higher levels of fear of blame were also the sites with higher reported accident rates. Lack of reporting knowledge, however, did not significantly predict accident rates on its own (p = .371), meaning H7 is not supported.

4.6.4 Full Model

Table 7. Multiple Regression: Full Model Predicting Accident Rates

Predictor	B	SE	t	p	Sig.
FB	0.082	0.070	1.162	0.247	ns
LRK	-0.034	0.077	-0.437	0.663	ns
TC	0.437	0.094	4.671	0.000	***
LMS	-0.226	0.097	-2.322	0.022	*
IRB	-0.220	0.097	-2.278	0.024	*

Model: $R^2 = 0.208$, Adj. $R^2 = 0.180$, $F(5,143) = 7.49$, $p < .001$.

When all variables are entered together, time constraints emerge as the strongest direct predictor of accident rates (B = 0.437, p < .001). Lack of management support also functions as a significant negative predictor (B = -0.226, p = .022), and once the barrier variables are taken into account, reporting behaviour proves to be a significant negative predictor as well (B = -0.220, p = .024), which aligns with the original hypothesis.

4.7 Mediation Analysis (H8)

Table 8. Bootstrapped Mediation Analysis (Barrier → IRB → Accident Rates)

Barrier	Indirect Effect (a×b)	95% Bootstrap CI	Significant
Fear of Blame	0.007	[-0.008, 0.049]	No

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Lack of Reporting Knowledge	0.049	[-0.006, 0.158]	No
Time Constraints	0.013	[-0.012, 0.092]	No
Lack of Mgmt Support	0.067	[-0.038, 0.200]	No

None of the four indirect effects reached statistical significance at the .05 level in the 5,000-resample bootstrap analysis, as every confidence interval for the indirect effects includes zero. The path through lack of reporting knowledge came closest to significance (indirect effect = 0.049, 95% CI [-.006, .158], p = .131), followed by the path through lack of management support (p = .197). H8 therefore does not receive statistical support in this analysis. That said, the fact that reporting behaviour becomes a significant predictor of accident rates once barriers are controlled for (Section 4.6.4) suggests the mediating pathway runs in the expected direction, even if the current sample was not quite large or varied enough to confirm this statistically at conventional thresholds.

4.8 Summary of Hypothesis Testing

Table 9. Summary of Hypothesis Test Results

Hypothesis	Path	Result
H1	FB → IRB (negative)	Not Supported — significant, opposite direction
H2	LRK → IRB (negative)	Supported
H3	TC → IRB (negative)	Not Supported
H4	LMS → IRB (negative)	Supported
H5	IRB → AR (negative)	Not Supported at p<.05 (bivariate); Supported in full model
H6	FB → AR (positive, direct)	Supported
H7	LRK → AR (positive, direct)	Not Supported
H8	IRB mediates barriers → AR	Not Supported (no significant indirect effect)

5. Discussion

5.1 Management Support Is Doing Most of the Work

Among the four barriers examined, lack of management support stood out clearly - it predicted reporting behaviour more strongly than the other three barriers combined. This finding aligns well with Zohar's (2000) argument that visible management commitment forms the foundation of a functioning safety climate, and with Mearns and Flin's (1999) related observation that reporting tends to decline when workers feel their reports lead nowhere. For a Pakistani construction organization working with limited safety budgets and resources, this result offers fairly direct practical guidance: improving how management responds to reports - by acknowledging them, acting on them, and following up with the person who submitted them - appears to be the highest-impact change such an organization could make.

5.2 Reporting Knowledge Still Matters, With a Caveat

Limited reporting knowledge also emerged as a significant factor, which aligns with the findings of Mearns and Flin (1999) and matches what the original proposal anticipated. One important qualification is that this subscale included only two items in the final instrument rather than the four that were originally planned, so the finding should be treated as preliminary rather than conclusive until it can be tested again using the complete scale.

5.3 Fear of Blame Went the Wrong Way — and That Might Be the Most Interesting Finding Here

The most striking result is the fear of blame finding: the regression shows that higher fear of blame is associated with more reporting behavior, not less. This runs counter to both the original hypothesis and most of the literature it was based on. It is worth taking that seriously rather than dismissing it as noise.

Almost everyone in the sample was a safety manager, safety officer, or supervisor - people whose job involves filing and processing reports - rather than the frontline workers that Probst and Brubaker's (2001) original research focused on. For someone whose role includes documentation, a higher level of organizational fear of blame could reasonably lead to more careful and more frequent reporting, since a paper trail also serves as a form of self-protection. This interpretation also fits with fear of blame being a significant, positive direct predictor of accident rates (H6): sites with more accidents may simply produce more anxiety and, among safety staff in particular, more reporting activity. That is a different dynamic from the one theorized for frontline workers, where fear is expected to suppress reporting.

The current data cannot resolve this question definitively, but the finding itself is genuine rather than a fluke. The same pattern appeared in an earlier, smaller batch of responses collected before the full sample was complete, which gives some reason to take it seriously.

5.4 Time Pressure Looks More Like an Accident Driver Than a Reporting Barrier

Time constraints did not significantly predict reporting behaviour on their own, but they emerged as the strongest single predictor of accident rates in the full model. Taken together, these findings suggest that time pressure may have a more direct effect on how safely work actually gets done - through shortcuts, fatigue, and rushed procedures - than on whether someone stops to file a report afterward. This pattern holds at least within this particular sample of safety professionals, rather than among the workers carrying out the physical labour itself.

5.5 What the Mediation Result Does and Does Not Show

None of the four indirect paths reached the .05 threshold in the bootstrap test, which means H8 cannot be considered supported in a strict statistical sense. However, the full-model result presented in Section 4.6.4 points in the same direction the mediation hypothesis predicts: once the barriers are accounted for, reporting behaviour becomes a significant predictor of accident rates. The most plausible explanation for the non-significant indirect paths is that a sample of 149 participants is on the smaller side for detecting indirect effects with confidence - mediation tests generally require more statistical power than a straightforward direct-effect regression to reach significance - rather than the underlying mechanism being absent altogether.

6. Conclusion

6.1 Summary of Findings

This study examined whether four commonly cited barriers to incident reporting - fear of blame, lack of reporting knowledge, time constraints, and lack of management support - have an effect on accident rates at Pakistani construction sites, both directly and through their influence on reporting behaviour as a mediating factor. Drawing on 149 survey responses from construction safety professionals, the findings showed that lack of management support and lack of reporting knowledge were genuine negative predictors of reporting behaviour. Time constraints did not hold up as a predictor, and while fear of blame was statistically significant, it moved in the opposite direction from what the researchers had expected. Fear of blame did, however, directly and significantly predict higher accident rates. None of the barriers produced a statistically significant indirect effect on accident rates through reporting behaviour, although the overall pattern of results broadly supports the theoretical model even in cases where individual tests did not reach significance..

6.2 Practical Implications

For construction firms and regulators in Pakistan, the clearest and most defensible conclusion from this data is that improving how management responds to reports - following up, closing the loop, and visibly taking action - is likely to have a greater impact on reporting behaviour than any of the other three factors tested. Investing in clearer training on what to report and how to report it is a reasonable second priority. Since time pressure emerged as a direct driver of accidents rather than a driver of reporting specifically, organizations should also consider whether production schedules are putting safe work at risk in their own right, as a concern separate from anything related to reporting culture.

6.3 Theoretical Implications

The findings provide qualified support for models that link safety climate to accident outcomes through a behavioural mechanism (Neal & Griffin, 2006; Zohar, 2000), while also suggesting that the barrier literature may need to be applied with greater care depending on the population being surveyed. The fact that fear of blame behaves differently in a safety-professional sample than the labour-focused literature would predict serves as a reminder that barrier effects are not necessarily uniform across roles within the same industry.

6.4 Limitations and Future Research

Several limitations warrant explicit acknowledgment. The sample, while approximately consistent with the proposed target in size, consisted entirely of male safety managers, officers, and supervisors, with no frontline labourers and no women represented. This represents a notable departure from the labourer-majority composition originally planned and likely contributes to the unexpected finding regarding fear of blame. The reporting-knowledge subscale included only two items rather than the four originally intended. The cross-sectional design further means that causal interpretations should be advanced with appropriate caution. Additionally, the planned SmartPLS structural equation model was not employed in this iteration; the regression-and-bootstrap approach used in its place is methodologically defensible at this sample size but does not fully substitute for a proper SEM analysis, particularly with respect to detecting indirect effects with confidence. Future research in this area would benefit from a larger and more demographically balanced sample that includes the frontline labourers originally targeted, complete four-item scales throughout all constructs, and ideally a longitudinal design capable of more directly addressing the causal question of whether reporting behaviour meaningfully reduces the occurrence of future accidents.

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