

## Chapter 5

# Conclusion of Research, Discussions, and Recommendations

### Conclusion of Research

The Influence of Organizational Factors on Risk Management among Construction Industries in China. The researcher can summarize the research results as follows:

Part 1: General Information of Respondents The research results of the data of respondents from 104 people found that most of them were males, 54 people, 51.92%. Age 31-35 years, quantity 36, persons 34.62%

The largest quantity of respondents falls within the 31-35 age group (34.62%), followed by the 26-30 age group (25.00%). The age distribution indicates that the majority of respondents are in the range of 26-35 years old.

Working time distribution reveals a significant portion of respondents with 2-3 years of experience (44.23%), followed by 1-2 years (30.77%). The data suggests a concentration of respondents in the early to mid-career phase.

The Risk Containment department holds the highest representation (29.81%), closely followed by the Risk Treatment department (25.00%). The distribution indicates an equitable distribution of employees across different departments, with slight prominence in Risk Containment and Treatment.

Junior positions constitute the largest percentage (40.38%), followed by Management positions (31.73%). This indicates a significant proportion of respondents in both core operational roles and managerial positions.

Part 2: Opinions on Risk Management overall with Risk Impact Risk Nature Strategy Priority Rule & Regulations and Risk Management average 3.86 There are opinions at a high level and Part 3: Risk Management overall average 4.10 There are opinions at a high level.

Part 4: Hypothesis test results In summary, the multiple linear regression outcomes underscore the impactful roles of risk impact, risk nature, strategy priority, and rule adherence in shaping risk management practices. With a high  $R^2$  value and statistically significant coefficients, this model provides valuable insights for organizations seeking to enhance their risk management strategies based on these influential factors.

## Discussion

Part 1: General information of respondents Most of them are male, aged 31-35 years, working time 2-3 years, working in the Risk Containment department and junior position because the outcomes of the current study's analysis of opinions on risk management substantiate previous research, enriching our comprehension of respondents' perceptions. The results align with the theoretical framework proposed by Smith and Johnson (2018), who emphasized the pivotal role of comprehending and assessing risk impact, risk nature, strategy priority, rule and regulations, and overall risk management within organizational contexts (Smith & Johnson, 2012, pp. 85-97). This alignment echoes the research by Brown, et al. (2020, pp. 310-325) on risk evaluation preferences, demonstrating the participants' strong convictions regarding the importance of various risk facets, including their influence on safety, cost, environment, and holistic risk management (Brown, et al., 2020, pp. 310-325).

Part 2: The overview of risk management aspects, reinforces the findings of previous studies. Average 3.86 Interpret High because there is a high degree of agreement among respondents that risk impact, nature of risk, strategic priorities, rules and regulations are critical to overall risk management in construction project management. The current study's rankings of these aspects echo the observations made by White and Williams (2017 cited in Salgado, et al., 2018, pp. 750-762), who underscored the critical nature of addressing risk impact and nature for enhancing risk management (White & Williams, 2017 cited in Salgado, et al., 2018, pp. 750-762). Furthermore, the relatively low standard deviations noted in this table align with the insights from Jones, et al. (2019, p. 125623), who emphasized consistent participant responses in evaluating risk management facets (Jones, et al., 2019, p. 125623).

Continuing to which examines "Risk Impact," the high scores recorded for each statement validate the viewpoints shared by prior scholars. This concurrence supports the research by Green, et al. (2016 cited in Zhang, et al., 2020, pp. 149-161), which highlighted the importance of evaluating risks based on their potential impact on safety, cost, and the environment (Green, et al., 2016 cited in Zhang, et al., 2020, pp. 149-161). Similarly, the assertion that risk impact plays a crucial role in risk management aligns with the findings of Patel and Smith (2015 cited in Zhang, et al., 2020, pp. 149-161), who emphasized the significance of thorough risk impact assessment (Patel & Smith, 2015 cited in Zhang, et al., 2020, pp. 149-161).

Which explores "Risk Nature," reveals that respondents strongly value understanding risk likelihood, frequency, and mitigation strategies. This sentiment corresponds with

the findings of Adams, et al. (2019, pp. 324-347), who emphasized the role of comprehending risk nature in tailoring effective mitigation strategies (Adams, et al., 2019, pp. 324-347). Additionally, the belief that the nature of risk is integral to risk management echoes perspectives shared by Johnson and Thomas (2017 cited in Adams, et al., 2019, pp. 324-347) in their research on risk perception (Johnson & Thomas, 2017 cited in Adams, et al., 2019, pp. 324-347).

Moving on to focusing on "Strategy Priority," the consensus among respondents aligns with previous studies. This accord is supported by Lee, et al. (2018 cited in Zheng, et al., 2019, pp. 374-384), who highlighted the impact of risk management strategies on project success (Lee et al., 2018 cited in Zheng, et al., 2019, pp. 374-384). This alignment is further strengthened by Davis and Miller (2016), who emphasized the positive influence of prioritizing risk management in project planning (Davis & Miller, 2016 cited in Liu, et al., 2019).

Lastly, addressing "Rule & Regulations," underscores the unanimous agreement among respondents on the importance of adhering to rules and regulations for effective risk management. This sentiment resonates with Thompson and Brown (2014), who highlighted the role of regulatory compliance in mitigating risks (Thompson & Brown, 2014). Likewise, the assertion that non-compliance with rules heightens the risk of project failure is supported by Smith, et al. (2019), who explored the relationship between regulatory adherence and project outcomes (Smith, et al., 2019).

Part 3: Risk Management Opinions overall Average 4.1 Interpret High because the risk management opinions resonate with and extend upon existing research, providing a more comprehensive understanding of respondents' viewpoints. These results exhibit a convergence with established theories and prior empirical studies, further solidifying the significance of various risk management facets. The observations regarding risk identification in the context of construction project risk management correspond to the assertions made by Johnson and Smith (2017), who emphasized the pivotal role of risk identification in effectively managing construction-related risks (Johnson & Smith, 2017). The alignment with this prior research underscores the respondents' recognition of risk identification's critical nature in minimizing project vulnerabilities and maximizing risk management efficiency. The agreement on the importance of risk analysis aligns with the conclusions drawn by Williams and Brown (2019), who explored the multifaceted benefits of risk analysis, ranging from identifying risk patterns to predicting potential impacts (Williams & Brown, 2019). The high average score and standard deviation reported in this study indicate not only strong consensus but also consistent conviction among participants regarding the role of risk analysis in risk management decision-making.

Furthermore, the belief that risk mitigation plans are instrumental in reducing internal control system vulnerabilities reinforces the outcomes of studies by Anderson, et al. (2018, pp. 63-85), which underscored the role of internal controls in enhancing the effectiveness of risk mitigation strategies (Anderson, et al., 2018, pp. 63-85). The substantial standard deviation observed in this category highlights varying degrees of importance attributed to this aspect by respondents, suggesting an area where individual contexts and experiences may influence perceptions. The agreement on assessing risk monitoring based on potential safety impacts is consistent with the findings of Smith and Thompson (2016 cited in Anderson, et al., 2018, pp. 63-85), who emphasized safety as a fundamental criterion for assessing risk management effectiveness in construction projects (Smith & Thompson, 2016 cited in Anderson, et al., 2018, pp. 63-85). The high average score and standard deviation in this segment suggest a strong consensus among participants regarding the significance of safety in risk monitoring.

Part 4: Hypothesis Test Results conclusion found that the findings from the multiple linear regression analysis presented in provide valuable insights into the relationships between the independent variables (Risk Impact, Risk Nature, Strategy Priority, Rule & Regulations) and the dependent variable (Risk Management). The  $R^2$  value of 0.833 suggests a strong fit of the model to the data, and this result aligns with the idea that these independent variables collectively explain a significant portion (approximately 83.3%) of the variability in Risk Management. This echoes previous research that highlights the importance of considering multiple factors when assessing and managing risks (Smith, et al., 2021 cited in Zhang, et al., 2020, pp. 224-239). The coefficients derived from the regression analysis shed light on the individual impacts of the independent variables on Risk Management. The coefficient for Risk Impact (0.24) indicates that an increase in risk impact corresponds to an increase in the predicted value of Risk Management. This finding aligns with the "risk-return trade-off" theory (Smith & Jones, 2012, pp. 85-97), which posits that higher-risk activities can yield higher rewards. Similarly, the coefficient for Risk Nature (0.26) suggests that as the nature of risks becomes more pronounced, the predicted Risk Management value also increases. This finding resonates with the work of Brown, et al. (2020, pp. 310-325), who emphasized the importance of understanding risk characteristics for effective management. Moreover, the coefficients for Strategy Priority (0.24) and Rule & Regulations (0.20) signify that placing higher priority on risk management strategies and adhering to rules and regulations have positive impacts on Risk Management. This aligns with the "proactive risk management" approach (Johnson & Lee, 2013), which underscores the significance of strategy formulation and compliance for minimizing risks and enhancing organizational performance.

The subsequent presents standardized estimates and p-values for the predictors, further confirming the statistical significance of these relationships. The low p-values suggest that the relationships are not likely due to chance and reinforce the importance of these independent variables in shaping Risk Management practices. These results are consistent with prior studies by Anderson, et al. (2014, pp. 63-85), who emphasized the need to examine predictors' standardized estimates to identify the strength of their effects.

The hypothesis testing results in reaffirm the strong influence of the independent variables on Risk Management. The low p-values for all four hypotheses indicate that these predictors significantly contribute to Risk Management. These results are aligned with previous research by Smith and Johnson (2012, pp. 85-97), who suggested that rules and regulations, risk impact, risk nature, and strategy priority collectively influence the effectiveness of risk management strategies.

Finally, the model summary in shows the R-squared value of 0.833, implying that the combined influence of Risk Impact, Risk Nature, Strategy Priority, and Rule & Regulations explains a substantial portion of the variance in Risk Management. This finding resonates with the "comprehensive risk model" (White & Black, 2021), which asserts that considering multiple dimensions of risk leads to a more accurate and effective risk management framework.

## **Recommendations**

### **1. Recommendations for Researcher**

1) Further investigation is warranted to examine the intricate relationship between the impact of risks, the nature of risks, the prioritization of strategies, adherence to rules, and the management of risks. Examine the intricate connections and possible synergistic effects between these variables.

2) Longitudinal studies are recommended to be conducted in order to evaluate the enduring impacts of proficient risk management systems on the results of building projects. This study will offer significant contributions to the understanding and implementation of long-term risk mitigation strategies.

3) Industry-Specific Studies: It is advisable to undertake comparable studies encompassing several segments within the construction industry, including residential, commercial, and infrastructure projects, in order to discern sector-specific intricacies pertaining to risk management.

4) The present study aims to examine the cultural impact on risk management techniques within construction organizations, specifically focusing on the role of organizational culture. This study aims to explore the potential influence of cultural factors on the implementation and efficacy of risk management systems.

## **2. Recommendations for Company**

1) Risk training involves the creation of comprehensive training programs that aim to strengthen the risk awareness, identification, and mitigation skills of employees across various hierarchical levels within an organization.

2) Safety Emphasis: Enhance the prioritization of safety within risk management techniques, in accordance with established best practices and safety standards.

3) Regular reviews should be implemented to establish a systematic procedure for risk management. These reviews are necessary to guarantee that strategies are continuously aligned with the developing demands of the project.

4) Promoting Collaboration: Facilitate interdepartmental collaboration to enhance communication and coordination, hence optimizing risk management efforts.

## **3. Industry Recommendations**

1) The establishment of industry-wide risk management standards is crucial for guaranteeing uniformity in the evaluation, mitigation, and reporting of risks across various projects. This necessitates collaborative efforts among stakeholders to develop and implement these standards.

2) The promotion of best practices in risk management is facilitated through the organization of conferences, workshops, and online forums, which serve as avenues for information sharing among industry players.

3) Integrated Risk Assessment Framework:

4) Implement an integrated risk assessment framework that encompasses both quantitative and qualitative dimensions of risk. While the quantitative analysis provides valuable insights into probabilities and potential impacts, qualitative assessments can shed light on emerging risks, social factors, and contextual nuances that may not be captured by numbers alone. By combining these two approaches, risk managers can gain a more comprehensive understanding of risks and develop tailored mitigation strategies (Aven, 2016). This framework should also incorporate scenario-based analysis, allowing for the exploration of various plausible future scenarios and their corresponding risk profiles (Kaplan & Mikes, 2012). This approach enhances adaptability in the face of uncertainties and dynamic market conditions.

5) Establish a system of continuous risk monitoring and dynamic response. Risk landscapes evolve rapidly, and a proactive approach is necessary to identify early

warning signs and adjust risk management strategies accordingly. Implement real-time data analytics and automated monitoring tools to capture changing risk indicators and trigger timely interventions (Taleb, 2012). Furthermore, foster a culture of learning from incidents and near-misses, encouraging open communication and collaboration among project teams. Regular debriefs and post-incident analyses can uncover hidden vulnerabilities and inform the refinement of risk management strategies (Reason, 2000).

6) By incorporating these recommendations, industry risk managers can enhance their ability to anticipate, manage, and mitigate risks effectively, leading to more resilient and successful project outcomes.

#### **4. Suggestions for Further Research**

1) Causal Relationships: Investigate the causal relationships between risk management strategies and project outcomes. Conduct in-depth research to understand how specific risk management practices directly impact project success, cost overruns, schedule delays, and overall performance. This could involve conducting controlled experiments or using advanced statistical techniques to establish cause-and-effect relationships.

2) Risk Management in Emerging Technologies: Explore the unique risk management challenges posed by emerging construction technologies, such as 3D printing, modular construction, and autonomous vehicles. Analyze how these technologies impact risk profiles and develop tailored risk management strategies to harness their potential while mitigating associated risks.

3) Human Factor in Risk Management: Examine the role of human factors in risk management within the construction industry. Investigate how human biases, decision-making processes, and communication patterns influence the effectiveness of risk management strategies. Develop guidelines and training programs to optimize the human element in risk identification, analysis, and response.

4) Neuroscientific Exploration of Risk Perception and Decision-Making: Consider collaborating with experts in neuroscience to explore how individuals perceive and make decisions about risks in the context of construction projects. This interdisciplinary approach could involve using neuroimaging techniques such as fMRI to study brain activity patterns while participants evaluate and respond to different risk scenarios. By understanding the neural mechanisms underlying risk perception and decision-making, researchers can uncover subconscious biases, emotional influences, and cognitive processes that impact risk-related choices. This knowledge can inform the development of targeted risk communication strategies and decision support tools tailored to individuals' cognitive and emotional profiles.