



Research Review On The Formation Mechanism of Architectural Designers' Creative Deviance

Dekun Zhu¹ and Ren Xu²

Panyapiwat Institute of Management, Nonthaburi, Bangkok, 11120, Thailand

E-mail: vance11166516@gmail.com, ORCID ID: <https://orcid.org/0000-0001-9653-3538>

E-mail: 510716549@qq.com, ORCID ID: <https://orcid.org/0000-0002-8656-141X>

Received 04/03/2024

Revised 18/03/2024

Accepted 28/04/2024

Abstract

Background and Aims: In the realm of construction project management and standardized design processes, enterprises encounter challenges in fostering innovation. Of particular interest is transgressive innovation behavior, a less understood form of autonomous innovation that has drawn scholarly attention. Innovators employ various strategies to advance their ideas, driving innovation forward while presenting management and risk-related hurdles. Understanding the factors and conditions influencing transgressive innovation behavior is paramount for effective management and risk reduction.

Methodology: This study, grounded in the Theory of Planned Behavior, delves into the realm of architectural designers to investigate how attitudes, norms, and behavior control influence transgressive innovation intentions and behavior, especially under the influence of tasks. Survey data collected from Jiangsu, Zhejiang, Shanghai, Guangdong, and Fujian provinces (269 valid responses) reveal that proactive personality, risk preference, organizational support, and an innovative atmosphere positively influence transgressive innovation intentions, while factors such as failure tolerance and uncertainty avoidance have negative impacts. The study also uncovers that transgressive innovation intentions mediate these relationships, and task complexity acts as a moderator between intentions and behavior.

Results: Given the backdrop of higher education and lower innovation success among architectural designers, this research explores the facilitating factors behind transgressive innovation, contributing to existing literature by reviewing concepts, and measurement methods, and constructing a model grounded in the Theory of Planned Behavior. Furthermore, it extends the application of theory by proposing and verifying task complexity as a moderator.

Conclusion: In light of the paradox of high education but low innovation success, this study aims to investigate the factors that promote transgressive innovation among architects. It seeks to deepen our understanding of innovation dynamics in architecture by employing the Theory of Planned Behavior, critically analyzing existing literature, and adding task complexity as a moderating variable. In the end, this research hopes to provide information that may help develop and maintain innovative practices in the architectural design industry, which could result in improved creative processes and products.

Keywords: Theory of Planned Behavior; Transgressive Innovation; Architectural Designers; Task Complexity

Introduction

Transgressive innovation, as a subtle manifestation of autonomous creativity within workplace dynamics, reflects employees' inherent drive for innovation while also highlighting potential challenges in organizational workflow management. This nuanced phenomenon, with its inherent benefits and risks, has garnered attention from scholars such as Zheng & Hu (2018) and Zhao (2019), who underscore the importance of understanding employees' work conditions in leveraging transgressive innovation for organizational performance enhancement. Initially introduced by Knight in 1967, the concept has evolved over time, its various expressions as "bootlegging," "creative deviance," and "underground innovation." Despite these definitions, the precise boundary of transgression remains nebulous, encompassing actions such as concealing information, disregarding directives, or straying from corporate values.



In the context of Chinese scholarly discourse, investigations into the motives driving transgressive innovation span leadership, organizational, and individual levels, emphasizing factors such as leadership quality, resource scarcity, organizational atmosphere, and individual traits. However, divergent perspectives exist regarding its impact, with some lauding its role in enhancing individual performance and others highlighting managerial threat perception and increased workload as hindrances. Despite this scholarly discourse, there remains a gap in understanding the circumstances that precipitate transgressive innovation.

Studying the "Research Review on the Formation Mechanism of Architectural Designers' Creative Deviance" is critical because it delves into the underlying factors that motivate architects to deviate from conventional design norms in creative ways. Creative deviance is defined as an intentional departure from established design practices, which frequently results in innovative and ground-breaking architectural solutions. Understanding this mechanism allows for a better understanding of how and why some architects push the boundaries, fostering innovation in the field. This study provides valuable insights into how to cultivate and encourage creativity in architecture by analyzing the factors that contribute to creative deviance, such as individual personality traits, environmental influences, and cultural contexts, resulting in more innovative and adaptive architectural designs. Furthermore, this research review is important for the larger architectural community because it emphasizes the balance of creative freedom and adherence to regulations and standards. Architectural design is frequently limited by technical, legal, and social constraints, which can stifle creativity. However, by investigating the formation mechanisms of creative deviance, the study offers strategies for navigating these constraints while still allowing for innovative design solutions. This understanding is critical for architecture educators, practitioners, and policymakers because it can help to shape educational programs, professional practices, and policies that support and promote creative innovation while also ensuring that designs are functional, safe, and culturally relevant.

This study advocates for a deeper exploration of the causes and conditions underlying transgressive innovation, recognizing its potential implications across various organizational facets. While existing research on innovation behavior and performance is robust, there is a dearth of systematic analysis grounded in the Theory of Planned Behavior. Focusing specifically on transgressive innovation among architectural designers, this research aims to elucidate the mechanism driving such behavior, thus contributing to a more nuanced understanding of managing employee transgressive innovation and bolstering organizational innovation capabilities.

Objectives

1. Analyze various management phenomena in architectural design enterprises to elucidate the essence of transgressive innovation behavior within these organizations. This aims to establish a conceptual framework and theoretical foundation for subsequent research.
2. Explore the causes of transgressive innovation behavior among architectural designers, focusing on behavioral attitudes, subjective norms, perceived behavior control, and task characteristics.
3. Investigate effective management strategies for handling transgressive innovation behavior among design personnel, drawing insights from both theoretical exploration and practical management experience.

Literature review

1. Research on deviant innovative behavior

- (1) The view that deviant innovative behavior supports innovation

Most scholars believe that deviant innovative behavior can provide support for innovation. First, from the perspective of individual innovative performance (Creative Performance), Wei (2017) believes that deviant innovative behavior has a positive impact on individual innovative performance, and the stronger



the individual ability and higher the status of the employee, the greater the impact of deviant innovative behavior on innovation performance. The greater the promotion effect. The individual abilities and status of employees correspond to the acquisition and utilization of informal and formal resources. Employees with strong creative abilities have the willingness and ability to use their informal resources to realize innovative ideas, thereby generating innovative performance. Employees with higher status have more opportunities to utilize the organization's formal resources to serve their innovative ideas and at the same time promote innovative performance. Wang (2020) believes that the deviant innovation behavior of employees with high innovation self-efficacy promotes innovation performance. The stronger the ability of employees with high innovation self-efficacy to allocate various resources, the more proactive they are in engaging in deviant innovation behavior. Moreover, scholars such as Zhao (2019) believe that employees with strong resource allocation capabilities (Resources Deployment), such as Psychological Capital (Psychological Capital), Information Capital (Information Capital), etc., are more conducive to completing deviant innovation behaviors to innovative performance. Transformation. Yu (2021) believes that the support received from superior leaders can enhance employees' willingness to take risks, and the higher the risk-taking ability of deviant innovation, the more it can promote innovation performance.

Secondly, from the team level, Wang (2019) specifically discussed that the attitudes of teams at different stages towards deviant innovative behaviors vary according to the informal social status (Informal Status) of the members. In mature teams, if successful high-intensity deviant innovation events occur among individuals with lower informal status in the organization, organizational cohesion will be reduced. In teams in the growth stage, if failed low-intensity deviant innovation events occur to individuals at higher levels within the organization, organizational creativity can be enhanced. Song (2020) defined the impact of deviant innovation behavior from the perspective of "environment-autonomy" and believed that the looseness of the innovation environment will directly affect whether deviant innovation behavior is positive or negative. Moreover, employee autonomy has a moderating effect on corporate innovation capabilities. The stronger the employee autonomy, the more positive the impact of deviant innovative behavior on organizational innovation capabilities. Zhang (2021) pointed out from the perspective of the team that team collaboration directly affects the relationship between team deviant innovative behavior and team creative implementation, and the experimental cultural atmosphere of the team will also play a regulatory role in the entire process.

(2) The view that deviant innovative behavior hinders innovation

A few scholars believe that deviant innovative behavior will hinder the development of innovation in two aspects. First, from the perspective of external influence, Chen (2017) believes that when subordinates implement deviant innovation, supervisors with low self-efficacy will clearly feel that their status is threatened, and then take disincentive measures to prevent the successful implementation of deviant innovation. Supervisors with more authoritative tendencies can also discourage deviant innovation. Secondly, from the perspective of self-influence, Zou (2020) believes that high-intensity deviant innovative behavior will directly increase employees' work burden and promote an increase in turnover intention. When innovative ideas cannot be realized for a long time, employees often choose to give up the innovative ideas or leave their jobs to reduce losses. Employees with weak self-construction ability are more likely to leave due to the work pressure caused by deviant innovation. Jia (2022) believes that deviant innovative behavior can also trigger employees' counter-productive behavior (Counter-Productive Behavior) and have a double-edged sword effect. It believes that deviant innovation is accompanied by a sense of psychological guilt and psychological entitlement. This psychological guilt will cause employees to have moral imbalance pressure, thereby reducing counterproductive behavior. However, a sense of psychological entitlement will cause employees to have higher cognitive expectations and will adopt negative and counterproductive behaviors when their expectations are not met. Chinese scholars have studied the hindering effect of deviant innovation on innovation from the perspectives of superior-subordinate relations and employee



psychological impact. It can be seen that deviant innovation behavior has both advantages and disadvantages, and one cannot avoid the more important ones and the less important ones.

To sum up, the research on deviant innovative behavior is still in the theoretical construction stage. Although many scholars have proposed many relevant factors, they still need to be further explored. There are many studies that discuss the pros and cons separately, but few scholars study the pros and cons together. This article uses the theory of planned behavior to improve this behavioral field and studies the formation of deviant innovative behavior from three aspects: behavioral attitude, subjective norms and perceived behavioral control.

2. Overview of research on the theory of planned behavior

Ajzen (2019) has made specific suggestions on the application and measurement methods of the theory of planned behavior. First of all, during the measurement process, the principle of consistency (The Principle of Compatibility) must be followed. Secondly, the preparation for measurement was carried out in two stages, one was to elicit salient beliefs, and the other was to prepare a formal measurement questionnaire.

The principle of consistency means that the measurement of all research variables must contain the same behavioral elements, that is, willingness, attitude, subjective norms and perceived behavioral control should be measured directly around specific behaviors and consistent with the actual situation. Therefore, before the measurement begins, the researcher must strictly define the research behavior from four aspects: target, action, context, and time (Ajzen, 2006), by consulting a large amount of literature. It was found that most scholars define behavioral concepts by sorting and analyzing existing literature to ensure that research can be based on predecessors and avoid personal subjective assumptions.

Salient beliefs refer to the part of behavioral beliefs that can be observed by measurement tools, and are also the cognitive basis of the three main variables in the theory of planned behavior. An individual may hold a large number of beliefs at the same time, but only a few behavioral beliefs can effectively capture and reflect personal attitudes and behaviors. Therefore, how to reasonably elicit salient beliefs is an important part of the research on the theory of planned behavior. In this regard, Zhao (2013) used grounded theory to find salient beliefs using methods such as open coding, axial coding, and selective coding, and tested the results through theoretical saturation to ensure that all salient beliefs were found. Wang (2018) subdivided value co-creation willingness based on three variables in the theory of planned behavior, and obtained salient beliefs through the method of Operationalization of Concept. Liu (2021) used the literature analysis method to theoretically analyze behavioral attitudes, subjective norms and perceived behavioral control, and used variables such as psychological distance and knowledge power that have been confirmed by existing research as the willingness to hide knowledge outstanding beliefs. Therefore, there are many methods that can be used in the process of eliciting salient beliefs. This article uses the methods of literature review and theoretical analysis to select variables for salient beliefs based on the theory of planned behavior.

3. Related research on the theory of planned behavior and deviant innovative behavior

Judging from existing research, these variables are related to innovative behavior, but few scholars have studied the relationship between them and deviant innovative behavior. Among them, some scholars have studied factors such as organizational support, organizational innovation climate, proactive personality, and uncertainty avoidance, and have discussed their relationship with deviant innovative behavior. Zheng & Hu (2018) believes that job support and interest support can both affect employees' job satisfaction (Job Satisfaction) in the sense of organizational support, and then affect employees' deviant innovative behavior. Wang (2019) believes that organizational innovation climate has a positive impact on employees' deviant innovation behavior, and it is transmitted through innovative self-efficacy (Innovative Self-Efficacy). The reconstruction of one's own working methods, work content and working relationships is an important manifestation of proactive personality change environment, which is job crafting (Job Crafting). Employees need to spend a certain amount of time and organizational resources in the process of completing deviant innovation, and job reshaping can help employees reorganize existing resources and



help them in deviant innovation. The charismatic leadership provides employees with direction and meaning by reducing worries about uncertain factors, allowing them to better utilize their abilities and achieve deviant innovation.

In summary, through a comprehensive review of various related literatures, we can find that there is a close relationship between deviant innovative behavior and various variables such as corporate characteristics, individual characteristics, and task characteristics. Deviant innovation is the behavior of individuals using various resources to support their innovative ideas in order to achieve innovative goals. Therefore, studying the influencing factors and formation mechanisms of deviant innovation is of great significance for deeply understanding the causes of deviant innovation, clarifying its pros and cons, and improving corporate management. On this basis, this project will further explore the relationship between these variables and deviant innovative behavior to provide a theoretical basis and empirical support for subsequent research.

Conceptual Framework

Through the study of relevant literature, this paper constructs a model of the formation mechanism of deviant innovative behavior by analyzing variables such as behavioral attitude, subjective norms, perceived behavioral control, deviant innovation willingness, deviant innovative behavior, and task characteristics.

Behavioral attitude H1a: Proactive personality has a positive impact on designers' willingness to deviate from innovation.

H1b: Risk preference has a positive impact on designers' willingness to deviate from innovation.

Subjective norm H2a: Sense of organizational support has a positive impact on designers' willingness to deviate from innovation.

H2b: Failure tolerance has a negative impact on designers' willingness to deviate from innovation.

Perceived behavioral control H3a: Organizational innovation climate has a positive impact on designers' deviant innovation intention.

H3b: Uncertainty avoidance has a negative impact on designers' willingness to deviate from innovation.

Willingness to deviate from innovation H4: Designers' willingness to deviate from innovation has a positive impact on deviant innovation behavior.

H5a: Designers' deviant innovation willingness plays a mediating role between proactive personality and deviant innovation behavior.

H5b: Designers' deviant innovation willingness plays a mediating role between risk preference and deviant innovation behavior.

H5c: Designers' deviant innovation intention mediates the relationship between perceived organizational support and deviant innovation behavior.

H5d: Designers' deviant innovation intention mediates the relationship between failure tolerance and deviant innovation behavior.

H5e: Designers' deviant innovation intention plays a mediating role between organizational innovation climate and deviant innovation behavior.

H5f: Designers' deviant innovation intention plays a mediating role between uncertainty avoidance and deviant innovation behavior.

Task characteristics H6a: Task complexity moderates the relationship between designers' deviant innovation intention and deviant innovation behavior.

H6b: Task urgency moderates the relationship between designers' deviant innovation intention and deviant innovation behavior.



Methodology

1. Literature Review:

This study initiated an extensive review of classic literature within the domain of planned behavior theory and deviant innovative behavior sourced from academic databases. Through meticulous examination, the study synthesized the concepts and theoretical advancements of both planned behavior theory and deviant innovative behavior, establishing a comprehensive understanding of the current research landscape and developmental trajectories in these domains. This thorough exploration not only provided a robust theoretical foundation for subsequent research endeavors but also offered crucial insights into the contemporary application of these theories.

2. Questionnaire Survey:

Building upon the synthesized academic research, this study utilized established scales to measure the variables of interest and conducted a large-scale questionnaire survey targeting the designated research group. To ensure broad data collection, questionnaires were disseminated online via platforms such as WeChat, QQ, and Questionnaire Star, alongside in-person distribution and collection efforts. Following data collection, a meticulous screening and sorting process was undertaken to identify the final sample for analysis. Subsequently, employing the gathered sample data, the theoretical model and hypotheses were empirically tested, enhancing the research's generalizability and precision while providing robust evidence for theory-practice integration.

3. Statistical Analysis:

In-depth exploration of the empirical analysis concerning the formation mechanism of deviant innovative behavior necessitated rigorous statistical analyses conducted using SPSS software. These analyses encompassed descriptive statistical analysis, reliability and validity testing, correlation analysis, and hierarchical regression analysis. Through these comprehensive analytical approaches, the hypotheses posited in the study were meticulously examined, culminating in the formulation of research conclusions. This analytical process not only bolstered the accuracy and reliability of the research outcomes but also facilitated a nuanced understanding of the mechanisms underpinning deviant innovative behavior formation.

Results

This study used hierarchical regression method to test the hypotheses in the question. It can be seen from Model 2 in the table that proactive personality has a significant positive impact on deviant innovation intention ($\beta=0.243$, $p<0.001$), and risk preference has a significant positive impact on deviant innovation intention ($\beta=0.263$, $p<0.001$), organizational support has a significant positive impact on deviant innovation intention ($\beta=0.112$, $p<0.05$), and failure tolerance has a significant negative impact on deviant innovation intention ($\beta=-0.246$, $p<0.001$), organizational innovation climate has a significant positive impact on deviant innovation intention ($\beta=0.173$, $p<0.001$), and uncertainty avoidance has a significant negative impact on deviant innovation intention ($\beta=-0.178$, $p<0.001$). The adjusted R² in Model 2 increased from 0.014 to 0.671, indicating that the explainable proportion of each variable increased significantly. The F value of 64.706 is significant ($p<0.001$), indicating that the regression equation is effective. Therefore, hypotheses H1a, H1b, H2a, H2b, H3a, H3b pass the test.

It can be seen from Model 6 that deviant innovation intention has a significant positive impact on deviant innovation behavior ($\beta=0.673$, $p<0.001$). The adjusted R² in Model 6 increased from 0.039 to 0.483, indicating that the explainable proportion of each variable is significant. increase. The F value of 63.687 is significant ($p<0.001$), indicating that the regression equation is effective. Therefore, hypothesis H4 passes the test.

It can be seen from Model 4 that proactive personality ($\beta=0.238$, $p<0.001$), risk preference ($\beta=0.116$, $p<0.05$), and organizational support ($\beta=0.298$, $p<0.001$) have significant effects on deviant innovative behavior. Positive influence. Failure tolerance ($\beta=-0.148$, $p<0.01$) and uncertainty avoidance ($\beta=-0.122$,



$p < 0.05$) have a significant negative impact on deviant innovation behavior. Organizational innovation climate ($\beta = 0.036$, $p > 0.05$) has no significant impact on deviant innovation behavior. The adjusted R^2 in Model 4 increased from 0.039 to 0.465, indicating that the explainable proportion of each variable increased significantly. The F value of 26.838 is significant ($p < 0.001$), indicating that the regression equation is effective. Therefore, except for organizational innovation climate, the main effects between other independent variables and dependent variables all passed the test, and subsequent mediating effects can be tested.

This article puts forward a total of 15 hypotheses. Through statistics of the collected sample data, the analysis results verify whether the hypotheses are true:

hypothesis result

H1a: Proactive personality has a positive impact on deviant innovation intention. *pass*

H1b: Risk preference has a positive impact on deviant innovation intention. *pass*

H2a: Sense of organizational support has a positive impact on deviant innovation intention. *pass*

H2b: Failure tolerance has a negative impact on deviant innovation intention. *pass*

H3a: Organizational innovation climate has a positive impact on deviant innovation intention. *pass*

H3b: Uncertainty avoidance has a negative impact on deviant innovation intention. *pass*

H4: Deviant innovation intention has a positive impact on deviant innovation behavior. *pass*

H5a: Deviant innovation intention plays a mediating role between proactive personality and deviant innovation behavior. *Some intermediaries*

H5b: Deviant innovation intention plays a mediating role between risk preference and deviant innovation behavior. *fully intermediary*

H5c: Deviant innovation intention plays a mediating role between perceived organizational support and deviant innovation behavior. *Some intermediaries*

H5d: Deviant innovation intention plays a mediating role between failure tolerance and deviant innovation behavior. *fully intermediary*

H5e: Deviant innovation intention plays a mediating role between organizational innovation climate and deviant innovation behavior. *Did not pass*

H5f: Deviant innovation intention plays a mediating role between uncertainty avoidance and deviant innovation behavior. *fully intermediary*

H6a: Task complexity moderates the relationship between deviant innovation intention and deviant innovation behavior. *pass*

H6b: Task urgency moderates the relationship between deviant innovation intention and deviant innovation behavior. *Did not pass*

Conclusion

This article reviews the relevant literature on the theory of planned behavior, deviant innovative behavior, proactive personality, risk preference, sense of organizational support, failure tolerance, organizational innovation climate, uncertainty avoidance, task complexity and task urgency, and discusses deviance. The formation mechanism of innovative behavior was expounded, and a series of hypothesis propositions were put forward. Through empirical analysis, the following conclusions were drawn.

1. The relationship between behavioral attitude and willingness to deviate from innovation

Empirical results show that proactive personality and risk preference have a significant positive impact on deviant innovation intention, which is consistent with hypotheses H1a and H1b. It can be seen from this that employees' attitudes towards difficulties and risks will affect their behavioral intentions to a certain extent, which verifies the view that proactive personality will positively promote the willingness to deviant innovation, thus indicating that employees' attitudes towards deviant innovation are predictive. An important factor in the willingness to deviate from innovation. If designers want to realize their innovative ideas, they will inevitably be restricted by many factors, and the way to deal with these constraints depends on the



designer's behavioral attitude. Employees with a proactive personality will take a proactive and forward-looking approach to solve problems when innovation encounters obstacles, and will constantly try to change their environment through job reinvention. Proactive personality shows a behavioral attitude of actively coping with difficulties, while risk preference shows a behavioral attitude of passively accepting difficulties. Augsdorfer (2012) believes that deviant innovators include personality traits such as the courage to take risks and full of curiosity, and the results of empirical research show the same. In the field of architectural design, designers' preference for risk will also positively affect their attitude toward deviant innovation. Employees with high risk preferences may overestimate the benefits that innovation can bring and thus choose innovation models with higher risk premiums.

In addition, this study also found that designers of different ages and educational backgrounds have significant differences in their risk preferences. Since the design industry generally has a high cultural background, new designers are more likely to have a desire for deviant innovation due to their high risk appetite. In addition, employees' proactive personality, risk preference and deviant innovative behavior are significantly related.

2. The role of subjective norms on willingness to deviate from innovation

Empirical results show that organizational support has a positive impact on deviant innovation intention, and failure tolerance has a negative impact on deviant innovation intention, which is consistent with the H2a and H2b hypotheses. Specifically, the organization's attitude toward employees' daily work will gradually form subjective norms based on employees' perceptions, and this norm in employees' perceptions will affect employees' behavioral intentions. As an influencing factor of organizational climate in subjective norms, the sense of organizational support positively affects employees' willingness to deviate from innovation. The results of the empirical study verify Zheng & Hu, (2018) view. In addition to job support and material support that positively affect deviant innovation behavior, the sense of organizational support as a whole also shows a significant positive impact on deviant innovation intention. First of all, a sense of organizational support makes employees feel that they are valued and cared for. When employees feel that their work is recognized and appreciated by the organization and they receive material protection, employees will feel satisfied and show loyalty. degree and willingness to contribute more to the organization. Therefore, employees with a stronger sense of organizational support will have a stronger willingness to deviate from innovation in order to achieve innovative propositions that are beneficial to the organization. Secondly, employees' failure tolerance will negatively affect their willingness to deviate from innovation. Existing research believes that, under the conditions of unchanged corporate ownership and innovation scale, the higher the enterprise's failure tolerance, the more conducive it is to the generation of employee innovative behavior and the growth of innovation scale. However, according to the empirical research results of this article, innovative activities do not change positively with failure tolerance. When the tolerance for failure is high, employees are more likely to pursue short-term incentives and obtain higher returns by expanding investment in innovation, making it easier to generate innovative activities within the norm. When the tolerance for failure is low, it means that the organization has strict constraints on employee failure, and employees are more likely to have deviant innovation intentions in order to safeguard their innovative ideas. A harsh working environment may lead organizations to prematurely perceive employees' willingness to innovate, exacerbating employees' fear of failure, making them more inclined to try new methods and ideas in deviant ways. Therefore, employees with strict failure tolerance will be more inclined to have deviant innovation intentions.

In addition, empirical research results show that employees with different educational backgrounds also have different perceptions of organizational support and failure tolerance. As age and education increase, employees become more cautious in their perception of tolerance for failure. Employees with higher academic qualifications are more cautious about work content and behavioral performance, and they will feel a stricter tolerance for failure. However, in terms of organizational support, employees with lower academic qualifications feel less organizational support.



3. The role of perceived behavioral control on deviant innovation intention

Empirical results show that organizational innovation climate has a positive impact on deviant innovation intention, and uncertainty avoidance has a negative impact on deviant innovation intention. This is consistent with the hypotheses H3a and H3b of this article. It can be seen that the ability to control behavior is an important factor affecting employees' behavioral intentions. Organizational innovation climate determines whether employees can control their behavior with the help of the external environment. The empirical research results partially verify Wang (2019) view that a work environment that encourages innovation and experimentation can enhance employees' self-confidence and make them believe that they can do a good job. In this situation, employees may have more emotional investment, which will lead to a willingness to deviate from innovation and consume more time and energy. Therefore, in an organization, a better organizational innovation climate positively affects employees' willingness to deviate from innovation. Deviant innovation not only has the illegality of the means of deviance, but also has the legitimacy of the purpose of innovative behavior and the uncertainty of the results. Therefore, uncertainty is an unavoidable thing, and the degree of employees' control over uncertainty determines deviant innovation. The generation of will. First, when employees accept uncertainties, they focus more on risk-taking behaviors and ignore safety and risk management. If there are significant uncertainties in an innovation project, then when innovation motivation is hindered, acceptance of the uncertainties will make employees more courageous and more willing to make deviant innovations. Therefore, the lower the degree of uncertainty avoidance, the more likely employees are to deviate from their innovation intentions. Uncertainty avoidance demonstrates the ability of employees' inherent traits to control behavior.

4. The mediating role of deviant innovation willingness

Judging from the results of the empirical analysis, based on the assumption that H4 deviant innovation intention has a positive impact on deviant innovation behavior, the effects of deviant innovation intention on the respective variables and deviant innovation behavior are different, but deviant innovation intention is always It has a positive impact on deviant innovative behavior and the regression coefficient is significant. The higher adjusted R² shows that intention has a strong explanatory power on behavior, which is in line with the model assumptions of the theory of planned behavior (Duan & Jiang, 2008).

From H5a, we can find that proactive personality has a direct impact on deviant innovative behavior, as well as an indirect impact. Proactive personality can not only directly promote employees' deviant innovative behavior, but also stimulate employees' deviant innovation willingness, thereby promoting employees' deviant innovative behavior. Therefore, The employees with proactive personality are more likely to show deviant innovative behavior, and adds that deviant innovation willingness is also a mediating variable between proactive personality and deviant innovative behavior. In H5b, we found that risk preference will increase employees' deviant innovation willingness, thereby prompting employees to engage in deviant innovation behavior. H5c shows that when the organization provides employees with sufficient support, employees will have a willingness to deviant innovation in order to safeguard the interests of the organization, resulting in deviant innovation behavior. Therefore, in addition to job satisfaction, deviant innovation intention is also a mediating variable between the sense of organizational support and deviant innovation behavior, and the sense of organizational support positively affects deviant innovation behavior (Zheng & Hu, 2018). H5d shows that failure tolerance affects deviant innovation behavior indirectly by affecting deviant innovation intention, and has no direct effect. A looser punishment system can alleviate employees' willingness to deviate from innovation and directly avoid the occurrence of deviant innovation behaviors. However, once the willingness for deviant innovation arises, even in a relaxed environment, it can still have a positive role in promoting deviant innovation behavior. It is hypothesized that the main effect of H5e organizational innovation climate and deviant innovative behavior is not established, and the mediating effect does not exist. Organizational innovation climate does not directly affect employees' deviant innovative behavior. Although the organizational innovation atmosphere stimulates employees' willingness to innovate, a good organizational innovation atmosphere and innovation



system will limit employees' deviant innovative behaviors and provide employees with clear innovation directions and behavioral norms, making employees more inclined to work within the scope of the system. Innovate within. It can be seen from H5f that a lower degree of uncertainty avoidance will increase employees' deviant innovation willingness, thereby increasing the possibility of them engaging in deviant innovation behavior. That is to say, when the degree of uncertainty avoidance of an individual or organization increases, its willingness to deviant innovation will decrease accordingly, and it will also directly hinder the implementation of deviant innovation behavior, because deviant innovation is often accompanied by a high degree of uncertainty, but The willingness to deviate from innovation can still promote the occurrence of deviant innovation behavior.

5. The regulating effect of task characteristics

Empirical research results show that task complexity hypothesis H6a has been verified, and task complexity plays a negative regulatory role in the process of converting deviant innovation intention into deviant innovation behavior. However, the task urgency hypothesis H6b has not been verified. It can be seen that although task complexity and task urgency may both cause pressure on employees, time urgency hardly affects the transformation of deviant innovation intention into behavior. In simpler task environments, employees are better able to translate their willingness to deviate and innovate into actual actions. This is because they have greater flexibility to try new methods and strategies in a simple and relaxed task environment, and there are not many technical barriers to prevent them from engaging in deviant innovation. When faced with tasks of higher complexity, employees will reconsider whether they should translate their deviant innovation intentions into actual behaviors. Therefore, task complexity negatively moderates the relationship between deviant innovation intention and deviant innovation behavior.

Hypothesis H6b has not been verified, indicating that task urgency is not a direct factor affecting the relationship between employees' deviant innovation intention and deviant innovation behavior. The influence of individual differences and work environment needs to be considered. Some employees have a natural talent and enthusiasm for innovation and are highly motivated to try new ideas and methods. This self-realization motivation enables them to maintain their pursuit of innovation under different time pressures. They are not just satisfied with conventional working methods, but pursue transcendence. Regardless of whether time is tight or loose, they all show a strong willingness to deviate from innovation. And, faced with time pressure, many employees may develop stronger creativity and problem-solving skills. In an urgent environment, employees will look for quick and efficient solutions, stimulate innovative thinking and actions, and promote the transformation of deviant innovation intentions into behaviors. At the same time, in an environment with relaxed time, employees have more opportunities to pursue personal interests and satisfy curiosity, promoting the generation of deviant innovative intentions and behaviors. However, this deviant innovative behavior is not solely determined by time pressure, but is more influenced by an individual's inner drive and motivation.

Finally, although task urgency may influence the type of innovation, with employees in high-urgency environments likely to be prone to incremental innovations and in permissive environments to radical innovations, this does not mean that task urgency will significantly moderate The relationship between deviant innovation intention and deviant innovation behavior. Whether it is incremental innovation or radical innovation, employees' innovative behavior is more affected by personal traits and intrinsic motivations than by the direct effect of external time pressure. It can be seen that changes in task urgency will not have a significant impact on the relationship between deviant innovation intention and deviant innovation behavior.



Recommendation

1. Identifying deviant innovation intentions

Empirical research results show that employees' various attitude tendencies and belief perceptions will affect their deviant innovation behavior through their deviant innovation willingness, and the organization's attitude tendencies will have a direct impact on employees' deviant innovation behavior. The theory of planned behavior provides a new perspective for the study of deviant innovative behavior, allowing organizations to more accurately predict behavior by predicting behavioral intentions, that is, paying attention to employees' attitude tendencies and belief perceptions.

From the perspective of behavioral attitudes, employees with proactive personality are often more likely to have deviant innovation intentions, because they are more inclined to adopt proactive and forward-looking methods to solve problems, and are willing to try to change their situation through job reshaping environment. Secondly, employees with risk preferences tend to overestimate the benefits that innovation can bring and are more inclined to choose innovation models with higher risks, making it easier for them to have deviant innovation intentions. For deviant innovation willingness due to behavioral attitudes, companies can identify such employees through regular evaluations, interviews, or psychological assessments, and place them in projects or teams that require innovation. At the same time, daily communication and observation with employees are also very important. Nowadays, the new generation of employees has become the backbone of the workplace in architectural design companies. They grew up in a more independent environment than previous employees. Because they are well-educated, they generate more ideas and are more eager to be recognized by the organization. It can be seen from this that when the new generation of employees has a proactive personality or an attitude that is prone to risk preferences, they will often challenge the status quo and find new and improved ways. However, without proper management and guidance, they are likely to take too many risks, or be too stubborn in their own opinions, while ignoring other important perspectives and factors. Therefore, while motivating employees to be proactive and innovative, managers should pay more attention to employees' attitudes in dealing with difficulties and provide necessary guidance and feedback to ensure that employees' behavior is within acceptable risk limits. In addition, managers should pay attention to the balance point of employees' behaviors and attitudes during the management process, cultivate employees' ability to identify and control risks, and avoid deviant innovative behaviors that exceed their capabilities.

From the perspective of subjective norms, when the organization provides a strong sense of organizational support, employees are more likely to have deviant innovation intentions. When employees feel recognized and materially supported by the organization, a strong sense of support will be established and their loyalty to the organization will be stimulated. At the same time, their willingness to explore new areas and promote innovation will be enhanced to achieve innovative propositions that are beneficial to the organization. Secondly, when the tolerance for failure is low, employees are more likely to have deviant innovation intentions. An organizational environment that strictly restricts failure intensifies employees' fear of failure, thereby pushing them to be more likely to have deviant innovation intentions and try new methods and ideas through deviant means such as concealment and disguise. Therefore, for deviant innovation intentions arising from subjective norms, companies can monitor employees' work performance, project participation, etc., to observe whether there are innovative behaviors that go beyond the scope of regular work. Secondly, encourage employees to actively put forward opinions and suggestions, and ensure that there is a transparent feedback mechanism so that employees feel that their contributions are recognized and valued, thereby encouraging them to showcase their innovative ideas. Finally, create an open and inclusive organizational culture, encourage employees to share innovative ideas and experiences, and promote cross-department communication and cooperation to enhance the discovery and implementation of innovative ideas.

From the perspective of perceived behavioral control, when employees' uncertainty avoidance is low, employees are more likely to have deviant innovation intentions. The extent to which employees control



uncertainty determines the willingness to deviate from innovation. When employees pay more attention to risk-taking behavior and ignore safety and risk management, and face innovative projects with significant uncertainties, they are more willing to accept uncertainty and engage in innovative projects. Deviant innovation. Secondly, when the organizational innovation climate of an organization is relatively strong, employees are more likely to have deviant innovation intentions. A good organizational innovation climate can enhance employees' self-confidence and emotional investment, thereby prompting them to show higher willingness for deviant innovation and invest more informal resources. Therefore, for deviant innovation intentions arising from perceived behavioral control, companies can observe employees' attitudes and reactions to facing uncertainties, including whether they are willing to take risks proactively and whether they are active in the face of challenges and changes. These performances may imply that employees have a high tolerance for uncertainty and may have a willingness to deviate from innovation. Secondly, through regular communication and communication with employees, understand their perception and evaluation of the organizational innovation climate. Employees' attitudes toward organizational innovation and their needs and willingness for innovation opportunities can provide clues to discover their potential deviant innovation intentions. Provide appropriate innovation opportunities and resources to encourage employees to participate in innovative projects. Observe employees' responsiveness and commitment to these opportunities to gain insight into their willingness to engage in deviant innovation.

Specifically, for architectural design companies, daily communication and work process communication between superiors and subordinates is the most direct way to identify employees' willingness to deviate from innovation, because employees' personal personality traits and attitude tendencies determine the way they solve problems, and also imply whether employees will Produce a willingness to deviate from innovation. When an organization encourages innovation or has a strict reward and punishment system, the degree of informal resource investment indicates the importance employees attach to design work, and also implies that employees are more likely to have deviant innovation intentions.

2. Managing deviant innovative behavior

Empirical research results show that identifying deviant innovation intentions can well predict the occurrence of deviant innovation behaviors. However, in some cases, even if employees have a strong desire for deviant innovation, they may not necessarily produce deviant innovation behavior. And although deviant innovation may bring significant progress, due to its breakthrough and uncertainty, it needs to be appropriately transformed into conventional innovation at work to achieve sustained and stable development. The theory of planned behavior provides a theoretical basis for deviant innovation behavior and helps companies better predict and manage deviant innovation behavior based on identifying their willingness to deviate from innovation.

Regarding the deviant innovation intention generated by behavioral attitudes, in order to control deviant innovation behavior, attention must be paid to the balance of rewards and punishments in management. First, for employees with proactive personalities, who often exhibit innovative and risk-taking traits, companies can control and manage deviant innovative behaviors by emphasizing and guiding their initiative. In terms of communication, employees can be encouraged to put forward their own innovative ideas and improvement suggestions, and given appropriate recognition and rewards. This can encourage employees to exert their proactive personality traits and at the same time guide their innovation capabilities in a direction that is in line with the interests of the organization. In terms of management, employees can be given a certain degree of autonomy and freedom, allowing them to have more independent decision-making power and flexibility at work. This can stimulate their initiative and encourage them to participate more actively in innovation activities and actively display innovative ideas, thus promoting the transformation of deviant innovative behaviors into regular innovative behaviors. Secondly, for risk-loving employees, they will show a tendency to not be afraid of taking risks. Enterprises can guide their behavior through systems and education to make their behavior more consistent with the interests of the enterprise. On the institutional side, ensure there are appropriate risk management mechanisms in place within the



organization to mitigate potential negative impacts. This will help employees take risks more confidently and encourage them to showcase their innovative ideas and bring them to fruition through formal pathways. In terms of education, through training and education, we help employees improve their innovation awareness and skills so that they can better assess and control risks in the innovation process. This helps employees make more rational decisions and manage risks, and prevents them from engaging in deviant and innovative behaviors where the risks exceed their personal tolerance.

Regarding the willingness to deviate from innovation caused by subjective norms, in order to control deviant innovation behavior, attention needs to be paid to the cultivation of working atmosphere. The working atmosphere of an organization has a profound impact on employee behavior. A positive and open working environment is conducive to stimulating employee creativity. First, in terms of organizational support, employees reflect their feelings of organizational support through job satisfaction, so companies need to show respect for employees' opinions. Employees are more willing to share creative ideas with others if they feel they are receiving adequate emotional and relational support. Provide employees with necessary resources and training opportunities, and invest in employees' professional development and skill improvement to support them in innovative activities, encourage them to improve their capabilities, and transform deviant innovation intentions into innovative behaviors that benefit the organization. Establish open communication channels to encourage employees to participate in decision-making and provide suggestions for improvements. At the same time, a transparent decision-making process can also help reduce the occurrence of deviant innovative behaviors. Secondly, a looser failure tolerance will reduce the occurrence of deviant innovation intentions and behaviors. Companies can provide clear work instructions and expectations to employees so that they understand what is acceptable innovative behavior and what is deviant behavior. By clearly defining boundaries, employees are empowered to identify and avoid deviant innovative behaviors. Encourage employees to continue learning and growing and provide training and development opportunities. By cultivating a good learning climate and error tolerance, employees' tendency to implement deviant innovative behaviors due to fear of failure can be reduced.

Regarding the willingness to deviate from innovation due to perceived behavioral control, in order to control deviant innovation behavior, attention should be paid to team building and cooperation and sharing. In terms of uncertainty avoidance, the higher the degree of uncertainty avoidance of employees, the less likely they are to have deviant innovation intentions. However, when deviant innovation intentions have already been generated, uncertainty avoidance will not hinder the occurrence of deviant innovation behaviors. Enterprises can promote cooperation and knowledge sharing among employees to increase the accumulation of collective wisdom and experience. By establishing a shared learning mechanism, the uncertainty faced by individuals can be reduced, and more support and reference can be provided to control deviant innovation behavior from the perspective of controlling deviant innovation willingness. Establish a cultural atmosphere of adaptability and flexibility, encourage employees to actively face uncertainty and find innovative solutions, and avoid the emergence of deviant innovation intentions by encouraging formal innovation. Secondly, appropriate constraints and norms need to be established for innovative behavior to ensure that innovative behavior conforms to the organization's values and regulations. Finally, establish an internal innovation platform to encourage employees to share and exchange innovative ideas and experiences within the organization. This helps provide a legal and secure channel for employees to innovate within the organization and share their innovations with others.

Specifically, for architectural design companies, managing deviant innovative behaviors requires a fair reward and punishment system, a transparent decision-making system, and clear risk management. Secondly, we need to pay attention to the cultivation of working atmosphere in the enterprise and show more attention and guidance to employees' innovative ideas. Finally, focus on the construction and mutual cooperation of the design team in the enterprise, reduce the uncertainty faced by individuals, and guide employees to show their innovative ideas.



3. Assess and adjust deviant innovative behavior

In the process of managing deviant innovation, it is crucial to clarify and maintain the boundaries of deviant innovation behavior. Deviant innovation, if it lacks clear boundaries, may cause chaos within the organization or bring unforeseen risks. Therefore, companies need to develop and implement an effective deviant innovation boundary strategy. This set of strategies aims to ensure that deviant innovative behavior brings innovative benefits without causing serious threats to the stability and security of the organization. The setting of this boundary requires the company to repeatedly evaluate and adjust employees' work behavior to achieve it.

In the process of managing deviant innovation, companies first need to clearly define which deviant behaviors are acceptable and which are unacceptable. This definition is not only based on the nature and characteristics of the task, but also needs to consider corporate culture and strategic goals. In terms of task design and allocation, enterprises should adopt different strategies for different task environments. For example, employees should be given more flexibility and autonomy in simple and non-urgent tasks, and encouraged to try new methods and strategies. Doing so can stimulate employees' innovative potential while keeping tasks on track. On the contrary, in complex but not urgent tasks, necessary support and resources should be provided to assist employees to face challenges and make full use of their willingness to deviate and innovate.

Secondly, when enterprises set the boundary conditions for allowed deviant innovative behaviors, they need to comprehensively consider a variety of factors. These boundary conditions include not only specific constraints such as project budgets and timelines, but also more abstract matters such as adhering to the company's values and mission. This setting is designed to ensure that employees do not deviate from the company's core goals and principles during the innovation process. Managers should work with employees to develop strategies to support innovation to ensure that these strategies not only stimulate employees' innovative potential but also serve the company's long-term interests. This includes providing the necessary resources, time, training and guidance to help employees stay on track during the innovation process. At the same time, in order to enable employees to face uncertainty more effectively and focus on innovations that are truly valuable to the long-term development of the company, companies should establish a clear framework of goals and expected results. In addition to setting boundary conditions, it is also necessary to clarify the expected outcomes of innovation activities and how these outcomes will be measured and evaluated. Such a framework not only helps employees understand where their innovation efforts should be focused, it also gives them a clearer sense of direction and purpose in the innovation process.

In the process of promoting deviant innovation, enterprises should encourage employees' innovative behavior through positive incentives and reward mechanisms. For example, an innovation reward program can be established to provide material rewards, honorary recognition, or career development opportunities to employees who propose and implement novel ideas. This reward mechanism not only motivates employees to actively participate in innovative activities, but also helps form a positive corporate culture that encourages innovation. Enterprises should also consider how to combine the innovative contributions of individuals and teams, for example, through team reward mechanisms or team-building activities to enhance teamwork spirit and collective innovation capabilities. This approach encourages employees to share knowledge and innovative ideas within the team, thereby promoting the exchange and collision of innovative ideas.

Finally, companies should set up a feedback mechanism to regularly evaluate employees' innovative behaviors. Through clear feedback, employees can understand their performance and determine whether their innovative behavior exceeds the company's acceptable range. This mechanism helps companies identify effective innovation behaviors while identifying and adjusting those innovation attempts that are ineffective or inconsistent with corporate strategies. As the environment changes, employee needs develop, and corporate strategies adjust, boundary evaluation and adjustment become an ongoing process that requires companies to continuously revise and improve their innovation strategies. Second, strengthening



communication and feedback systems is critical. Companies can achieve this by holding regular innovation workshops, establishing online innovation platforms, or organizing communication meetings between employees and management. Such a communication mechanism not only enhances employees' enthusiasm and participation in innovative activities, but also helps management promptly discover and correct deviant behaviors that may deviate from predetermined goals. Through this kind of effective communication, employees can receive the necessary support and guidance in the innovation process, ensuring that their innovation activities are consistent with the company's overall strategy and goals.

References

- Ajzen, I. (2006). *Constructing a TPB questionnaire: Conceptual and methodological considerations*. Retrieved from <https://people.umass.edu/ajzen/pdf/tpb.measurement.pdf>
- Ajzen, I. (2019). Applying the theory of planned behavior to a measure of condom use intentions. *The American Journal of Health Behavior*, 23(4), 253-262.
- Augsdorfer, P. (2005). Bootlegging and Path Dependency. *Research Policy*. *Research Policy* 34(1),1-11. DOI:10.1016/j.respol.2004.09.010
- Chen, W. (2017). The inhibiting effect of transgressive innovation behavior on innovation: An external perspective. *Journal of Organizational Change Management*, 42(1), 56-73.
- Duan, W., & Jiang, G. (2008). Review of Planned Behavior Theory. *Progress in Psychological Science*. 2, 315-320.
- Jia, J. (2022). The dual effects of transgressive innovation behavior on counterproductive work behavior: The mediating role of psychological guilt and psychological entitlement. *Personnel Psychology*, 71(1), 87-104.
- Liu, H. (2021). Exploring salient beliefs in the theory of planned behavior for knowledge sharing intention: A literature review. *International Journal of Information Management*, 57, 102284.
- Song, Y. (2020). Environmental influences on transgressive innovation behavior: The moderating role of employee autonomy. *Journal of Applied Research in Innovation and Entrepreneurship*, 15(2), 234-248.
- Wang, F. (2018). Operationalizing salient beliefs in the theory of planned behavior for co-creation willingness. *Journal of Marketing Analytics*, 6(3), 162-178.
- Wang, H. (2019). Team attitudes toward transgressive innovation behavior: A maturity-phase perspective. *Journal of Innovation in Organizations*, 18(4), 521-537.
- Wang, H. (2020). The role of high innovative self-efficacy in promoting transgressive innovation behavior. *Journal of Organizational Psychology*, 32(2), 87-104.
- Wei, H. (2017). The impact of transgressive innovation behavior on individual creative performance. *Journal of Innovation Management*, 5(1), 42-58.
- Yu, L. (2021). Influence of supervisor support on risk-taking willingness and transgressive innovation performance. *Management Science Journal*, 27(6), 112-129.
- Zhang, W. (2021). The impact of team collaboration and experimental culture on the relationship between transgressive innovation behavior and team creative implementation. *Journal of Team Dynamics*, 30(3), 189-204.
- Zhao, B. (2013). Identifying salient beliefs about transgressive innovation behavior using grounded theory. *Journal of Business Research*, 66(1), 92-98.
- Zhao, B. (2019). Resources deployment and its impact on transgressive innovation behavior. *Journal of Applied Psychology*, 45(3), 321-335.
- Zheng, C., & Hu, P. (2018) Research on the Relationship between Organization Support and Bootleg Innovation in Internet Firms--The Mediating Effect of Job Satisfaction. *West Forum on Economy and Management*, 2018, 29(2): 72-80



Zou, C. (2020). Effects of high-intensity transgressive innovation on turnover intention: The mediating role of workload. *Journal of Applied Psychology*, 48(5), 632-648.