Research on the Purchase Intention and Behavior of Inherent Defects Insurance in Construction Quality: Evidence from China

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Abstract. Based on the Theory of Planned Behavior (TPB), a theoretical model of Inherent Defects Insurance (IDI) purchase intention and behavior was constructed. Data were collected through questionnaires and Structural Equation Modeling (SEM) was used to explore the factors influencing the intentions and behaviors of IDI purchase in construction units. The results indicate that subjective norms and perceived behavioral control have a direct impact on purchase intention, which, in turn, directly affects purchase behavior. These findings provide valuable theoretical insights for the formulation of policies aimed at enhancing construction units' motivation for IDI insurance and promoting the development of IDI.

Keywords: Theory of planned behavior; Inherent Defects Insurance; Purchase intention; Purchase behavior; Structural equation modeling.

1 Introduction

Construction quality has long been a paramount concern affecting people's livelihoods. Currently, amidst the rapid expansion of the residential construction sector, construction quality has not been effectively guaranteed, resulting in frequent complaints about quality issues. In order to improve the existing construction quality assurance mechanism, Inherent Defects Insurance (IDI) has emerged. This insurance is obtained by the construction unit, and in accordance with laws, regulations, and insurance terms, the insurance company will compensate, repair, or replace potential quality problems that developers and other construction bodies fail to discover but are exposed during the acceptance process by the owners upon completion of the construction project. Scholarly attention primarily gravitates towards qualitative investigations concerning IDI, with more theoretical research on the top-level design and less applied research on insurance promotion strategies. Furthermore, the absence of well-established theoretical frameworks addressing IDI purchase intention and behavior is notable. A detailed study

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of the factors and mechanisms influencing IDI purchase intention and behavior in conjunction with the attributes of insurance itself is still an area to be explored in depth.

TPB, a well-established framework in social psychology, is commonly employed to forecast and elucidate individual behaviors within specific contexts. Its explanatory and predictive power for individual behavior has also been widely confirmed. Therefore, based on TPB, this study constructs a theoretical model of IDI purchase intention and behavior of construction units, explores the main influences on IDI purchase intentions and behaviors, and provides decision-making basis for the development of a more motivating IDI system design and promotion strategy.

2 Theoretical Models and Hypotheses Development

TPB posits that an individual's intention to act is the most reliable predictor of behavior, influenced by three core variables: behavioral attitudes, subjective norms, and perceived behavioral control, as shown in Figure 1.

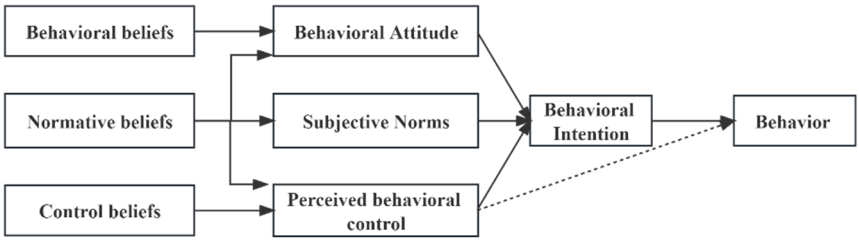

Fig. 1. Structural model of the Theory of Planned Behaviour

In this research context, the unique nature of IDI prompts an extension and augmentation of TPB. Cognitive information and emotional beliefs are emphasized to enhance the research's specificity.

Cognitive information encompasses subjective perception of IDI, conceptual perceptions, and the managers' personal awareness of project risks. Nautiyal found that cognitive information has a weak but significant impact on consumers' intentions[1]. The specific impact pathways remain to be further explored. Consequently, this paper posits the following hypothesis: H1: Construction unit managers' cognitive information about IDI positively and significantly influences purchase intention.

Emotional beliefs regarding IDI encompass the trust and satisfaction with insurance products. Hardwick demonstrated that increased visibility of insurance companies correlates with heightened insurance intention among consumers[2]. Some studies also contend that the quality of its service and consumer feedback on service quality are relevant to purchase decisions. Posits the following hypothesis: H2: Construction unit managers' emotional beliefs about IDI positively and significantly influences purchase intention.

According to TPB, an individual's attitude toward a behavior directly correlates with intention. Laureti demonstrated the intricate link between consumers' behavioral attitudes and purchase intention[3]. Zayed found that consumer intention to purchase

organic food is significantly influenced by consumer attitudes[4]. Consequently, positing the following hypothesis:H3: Construction unit managers' behavioral attitudes about IDI positively and significantly influences purchase intention. This study endeavors to validate whether attitude serves as a mediating variable. Therefore, the following hypotheses are proposed:H4: Construction unit managers' behavioral attitudes mediate between subjective norms and purchase intentions.H5: Construction unit managers' behavioral attitudes mediate between emotional beliefs and purchase intentions.

Subjective norms primarily refer to the social pressure experienced by consumers from their surrounding environment when making purchasing decisions. Choi et al. indicated that workers' safety behavior is influenced by perceived management norms and perceived workgroup norms[5].Therefore, positing the following hypothesis:H6: Subjective norms positively and significantly influences the purchase intention of construction unit managers. Perceived behavioral control refers to the extent to which an individual perceives the ease or difficulty of performing a specific behavior. Feng believed that perceived ease of use can indirectly affect intentions through attitudes[6]. Teixeira's research findings indicated that perceived behavioral control is a determinant of consumers' intention to purchase organic food[7].Consequently, positing the following hypothesis: H7: Perceived behavioral control positively and significantly influences the purchase intention of construction unit managers.

TPB suggests that behavioral intention is the primary factor significantly influencing behavior. Consequently, this paper posits the following hypothesis: H8: Purchase intention positively and significantly influences purchase behavior. The theoretical model of this paper is formed, as shown in Figure 2.

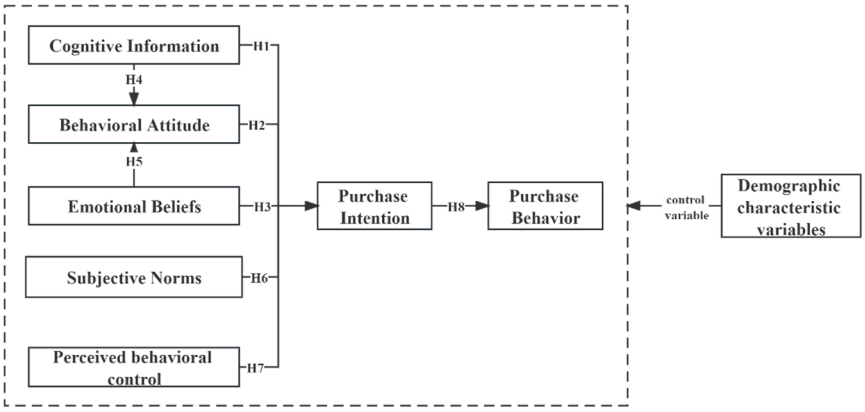

Fig. 2. Theoretical model of IDI purchase intention and behavior of construction unit managers

3 Data and Methods

The target group for this questionnaire comprises managers of construction units, from domestic IDI pilot cities (such as Shanghai, Guangzhou, etc.) as well as selected non-

pilot urban areas. The questionnaires were disseminated online. A total of 199 questionnaires were distributed, and 185 valid responses were collected.

The specific questions are are formed by adapting the scales of other scholars according to the specific research situation of this paper. The Likert scale, providing options from "strongly disagree" to "strongly agree," was used for measurement.

SEM was applied for data analysis. Building upon prior research, a theoretical initial model for the purchase intention and behavior of construction units regarding IDI was proposed, as shown in Figure 3. Additionally, a systematic validation analysis was carried out in a step-by-step manner to ensure the reliability of the model.

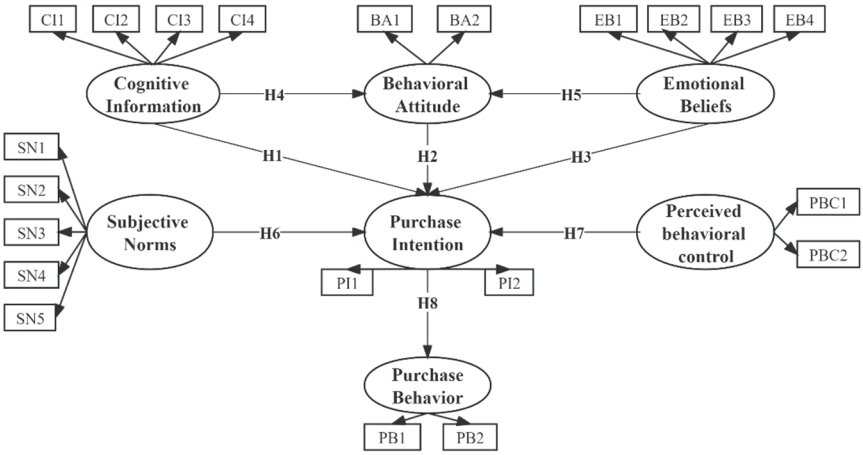

Fig. 3. Construction Unit IDI Purchase Behavior Measurement and Path Modeling

4 Results and Analyses

Initially, the model fit is assessed. The test results of each fitness index are presented in Table 1. All fit indices align with the judging standard for the fit of the SEM, indicating a robust matching relationship between the SEM and the actual observed data. The model fit has reached a satisfactory level.

Table 1. Model Fitness Tests

Index	reference standard	Measured results
CMIN/DF	1-3 is excellent, 3-5 is good	2.233
RESEA	<0.05 is excellent, <0.08 is acceptable	0.068
CFI	The closer to 1, the better, generally require > 0.8	0.858
IFI	The closer to 1, the better, generally require > 0.8	0.864

The hypotheses regarding the path relationships influencing IDI purchase intention and behavior were tested. Notably, Emotional beliefs on behavioral attitude, subjective norms on purchase intention and purchase intention on purchase behavior are

significant at the 0.1% level, with standardized path coefficients of 0.853, 0.839 and 0.659, respectively. This indicates the acceptance of hypotheses H5, H6 and H8. Perceived Behavioral Control on purchase intention is significant at the 1% level with a standardized path coefficient of 0.298, confirming the acceptance of hypothesis H7. The remaining hypotheses(H1, H2, H3, and H4) are not accepted. The results of the hypothesis testing and each path of the structural model are presented in Table 2 and Figure 4, respectively.

Table 2. Path coefficient test results

Hypothesis	Path	Estimate	SE	CR	P	Inspection results
H1	CI→PI	0.138	0.063	1.54	0.124	reject
H2	EB→PI	0.357	0.282	1.502	0.133	reject
H3	BA→PI	-0.046	0.223	-0.196	0.845	reject
H4	CI→BA	-0.033	0.063	-0.388	0.698	reject
H5	EB→BA	0.853	0.213	5.02	***	accept
H6	SN→PI	0.839	0.17	5.245	***	accept
H7	PBC→PI	0.298	0.09	2.797	**	accept
H8	PI→PB	0.659	0.175	5.022	***	accept

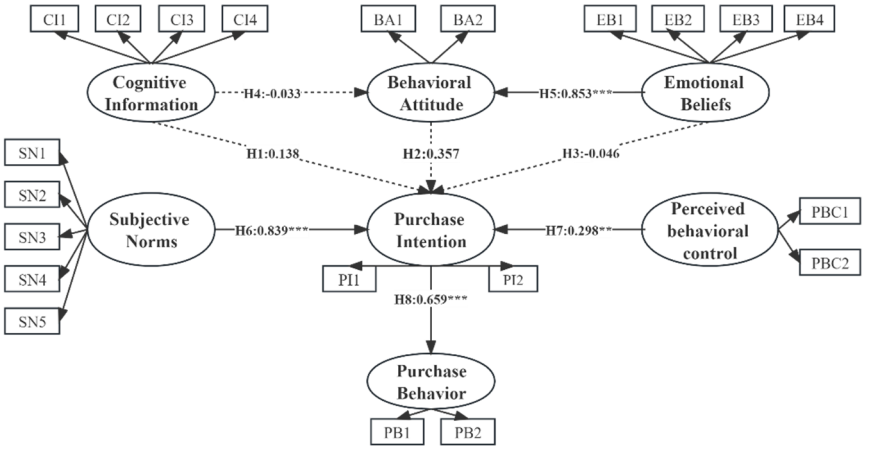

Fig. 4. Path coefficients and significance of structural models

Since hypothesis H2 not accepted, there is no need to test the mediating role of behavioral attitudes between emotional beliefs and purchase intention. Therefore, hypothesis H5 is not accepted.

5 Discussion

The purpose of this paper is to gain a deeper understanding of the factors that influence IDI purchase intentions and behaviors in construction units, and to provide a basis for developing and adapting insurance design and incentive strategies.

According to the results, hypothesis H6 is supported (path: SN→PI). This suggests that construction unit managers' intention to purchase IDI is strongly influenced by the social pressures exerted within their immediate environment. This finding is consistent with the work of Temeljotov Salaj that argued that participation in groups and networks would benefit from social norms, which might inspire members to imitate attitudes, behaviors, and tangible measures[8]. This may be related to the personality traits of Chinese nationals and the actual situation of IDI development in China. First, China is a country with strong collectivism, and individuals are easily subject to the social pressure of the people around them. Yang points out that the social orientation of Chinese and the higher tendency to obey social expectations in behavioral decision-making make Chinese consumers attach great importance to external opinions and social acceptance[9].Therefore, subjective norms emerge as a crucial factor in elucidating the intention and behavior of Chinese consumers. If purchasing IDI is seen as responsible behavior or an industry standard in the construction industry, construction unit managers might be swayed by their peers towards a heightened inclination for IDI procurement. Secondly, considering the backdrop of incomplete IDI development in China, non-pilot cities, or even pilot city construction units, lack sufficient knowledge about it. The feedback data of the first batch of landed projects has not yet been received, making it more necessary to be driven by external influences. Additionally, subjective norms, along with incentives and other support mechanisms, play a crucial role in alleviating the concerns of construction units. Consequently, IDI purchase intentions are most significantly influenced by subjective norms. So when the government aims to boost the inclination of construction units towards IDI procurement, a more effective strategy entails standardizing regulations and standards across governmental bodies and spearheading the mandatory implementation of IDI in select public projects, thereby setting a precedent for wider adoption.

Hypothesis H7 is also supported, signifying that perceived behavioral control has a direct positive effect on purchase intention (path: PBC→PI), which is also consistent with the findings of previous research[8]. In this study, it is observed that construction unit management's perception of a higher degree of active control over the purchase of IDI corresponds to a greater intention to procure insurance. The streamlined purchasing process complemented by comprehensive information dissemination and effective product promotion enhance managers' perception of IDI procurement convenience, thereby heightening the probability of purchase.

Among the influencing factors of construction unit IDI purchase behavior, purchase intention plays the most significant role and directly affects purchase behavior (path: PI→PB).

6 Conclusions

Based on TPB and integrating it with the current status of IDI implementation, this study formulates a theoretical model for the purchase intention and behavior of construction units regarding IDI. The research hypotheses derived from this model guide the data collection process through questionnaires. SEM is then employed to investigate the factors influencing IDI purchase intention and behavior, along with the pathways of their effects. This exploration aims to reveal the underlying factors impeding the prsoactive engagement of construction units in IDI. The main conclusions are as follows: Among the factors, subjective norms (path: SN→PI, 0.839) and perceived behavioral control(path: PBC→PI, 0.298) directly influence the IDI purchase intention; Purchase intention exerts the greatest influence on purchasing behavior with a direct effect (path: PI→PB, 0.659).

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