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## Designing Open Innovation Model in Active Small and Medium Sized Enterprises by Mix method

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### Abstract

The main purpose of this study was to develop and validate an open innovation model in small and medium enterprises active in the Iranian Food Industries. In so doing, a sequential exploratory mixed methods research was used. Thus, the data were collected in two phases: In the qualitative section, using the grounded theory method, through a semi-structured interview with 25 managers and university experts, the data were collected and codes and open innovation components were counted developed in the form of a grounded theory method. The questionnaire was designed based on the findings from the qualitative stage. In order to validate the model, the newly developed questionnaire was further administered among 371 managers and employees of food companies selected by proportional stratified sampling method. The validity of the research model was determined by the indicators of the measurement model, and structural model and SEM general indicators were measured and its results suggest acceptable fit for all of above-mentioned indicators.

### Introduction

Creativity and innovation have been considered as one of the salient issues which facilitate change in any organization (Ahmadi, 2013: 15). As Chesbrough (2012) rightly put in the absence of innovation in organizations, there would never have been the organizations in long run. Nowadays, the necessity of using open innovation to increase the competitive ability of companies in domestic and foreign markets is

growing (Zhang and Zeng, 2009). Open innovation—a notion introduced by Henry Chesbrough—has become widely practiced in business and academic disciplines (Chesbrough & Garmann, 2009)

The application of open innovation in commercialization by companies has several advantages. For example, based on research studies, the use of open innovation can boost product success rates by up to 50% and, similarly, foster the productivity of internal research and development by up to 60%. (Enkell et al., 2009). Given this, one of the companies that create entrepreneurial opportunities and provide the right platform for innovation and the economy of the country is small and medium enterprises. In the present study, the researchers, adhering to the paradigm of open innovation, made an attempt to cast a visible light to this issue. The reasons are: (1) Small and medium enterprises account for 94% of the companies in Iran; (2) they are the main source of employment, i.e., almost 70% of the employment rates were initiated by these companies; and (3) According to the World Labor Organization (WLO), almost 70 percent of innovations and industrial inventions have been created by entrepreneurs working in small and medium-sized enterprises.

#### **Case Study:**

Inspired by the gaps in the literature, and due to the indispensable role of these small and medium enterprises, the current study probed the issue of open innovation in one of the industrial towns which is located in Chaharmahal and Bakhtiari province. At present, the study of the performance of small and medium enterprises in the province of Chaharmahal and Bakhtiari indicates that these settlements have 800 small and medium enterprises, of which 200 to 250 units are closed during the surveys, while other companies. They are also working on half of their production capacity, and there are only about 400 active companies.

#### **Materials and Methods**

The overall design of the current study was a mixed methods research. More specifically, a sequential exploratory mixed-method design was used in order to uncover a probable open innovation model in active small and medium enterprises in the Iranian food industries. By adopting two separate phases, the researchers first collect and analyze qualitative data (i.e., using a semi-structured interview with 25 managers and university experts); second, the quantitative data (i.e., using a questionnaire) were collected and analyzed sequentially in order to help

explain the qualitative results. The questionnaire and the initial model were designed based on the findings from the qualitative phase.

### **Discussion and Results**

According to qualitative data, the findings uncovered a model comprising the following themes:

- (1) The conditions affecting open innovation
- (2) The conditions underlying the strategies
- (3) The intervening conditions affecting strategies
- (4) The effective strategies
- (5) The implications of open innovation

Sequentially, the results of quantitative data confirmed the proposed model and suggest acceptable fit for all extracted indicators.

### **Conclusion:**

The overarching purpose of this study was to develop and validate an open innovation model in small and medium enterprises active in the Iranian Food Industries. The food industry as one of the most important industrial sectors in the national economy of the country has led the researcher to design an open innovation model in the food industry of the country. Due to the lack of model for operationalizing open innovation in food industries, the current study made an initiative to bridge this gap by employing a sequential exploratory mixed methods research. Overall then, the qualitative and quantitative findings underscored the necessity of implementing an innovative model for the small and medium enterprises.

**Keywords:** open innovation, small and medium enterprises, food industries, grounded theory, structural equation model.