

## Chapter 3

### Research Methodology

This research adopts both qualitative and quantitative research approaches. The details about the research methodology as follows:

1. Research Design
2. Population and Sample Size
3. Research Instruments
4. Data Collection
5. Data Analysis

#### Research Design

Since there are 3 objectives in this research, the researcher explains the research design based on each objective, which is summarized in Table 3.1.

**Table 3.1** Objective-based research design

Research Design	Objective #1	Objective #2	Objective #3
Population and sample size	8 CEOs	400 persons	3 experts
Research instruments	Interview Questions	Questionnaire	Interview Questions
Data-collection	Telephone Call	Online Questionnaire	Online Conference
Data analysis	Thematic Analysis (Qualitative)	Descriptive Analysis Confirmatory Analysis (Quantitative)	Content Analysis (Qualitative)

Once the research gathered all the related literature review, each research design for each research objective is determined. In the following sections 2 to 5, the researcher will explain objective by objective, respectively.

## Population and Sample Size

This research aims to examine how small and medium-sized technology enterprises in Bishan District, Chongqing address challenges related to humanized management. To this end, 8 CEOs from these enterprises were randomly selected for the study. For the second objective, analyzing the factors of humanized management in Bishan District, Chongqing, a sample size of 400 employees from these companies was chosen to respond to online questionnaires. Typically, the sample size for a questionnaire is recommended to be about 5 to 10 times the number of questions. Given that this questionnaire comprises 27 questions, the appropriate sample size ranges from 135 to 270, thus exceeding the minimum requirement (SPPSAU, 2022).

## Research Instruments

### 1. Interview Questionnaire for Research Objective 1

Flick offers a set of fundamental questions for qualitative researchers to employ in their coding strategy (Flick, 2009). Additionally, Larue, a professor of Journalism in Nevada, USA, has developed an auxiliary formula for question design, useful in creating interview outlines (Bj\_xvxyz. 2017). Consequently, based on the guidelines provided by Flick and Larue, Table 3.2 describes how the interview questions were formulated. Chongqing's Bishan District has developed these interview questions in order to better understand the challenges related to humanized management in small and medium-sized technology enterprises.

This thesis will adopt a quantitative research method. Because the size of samples data in this thesis is large, it is difficult to collect data directly. Therefore, we develop a data crawler program in Python to capture data related to products comments from JD and Xiaohongshu, and then save the collected data to a local folder. We develop a data processing program in Python to process and gather statistics on the collected data, and then use SPSS to perform statistical analysis.

**Table 3.2** Interview Questionnaire for Research Objective 1

Questions
1. Can you describe the current humanized management practices within your organization?
2. What are the main challenges or issues you observe in implementing

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humanized management in small and medium-sized enterprises in Bishan District?

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3. How do employees perceive the existing management approach in terms of promoting a humanized work environment?

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4. Are there specific instances or cases where humanized management has faced obstacles or encountered resistance within the organization?

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5. What feedback or concerns have been raised by employees regarding the current humanized management practices?

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## 2. Online Questionnaires for Research Objective 2

The questionnaire comprises two sections. The first section encompasses the inquiry itself, an introduction to the questionnaire, background information on the survey, and instructions for completion. The second section, the core of the questionnaire, is divided into multiple subsections, each tailored to specific aspects of the survey (See Appendix C).

**Table 3.3** Online Questionnaires for Research Objective 2

Variables	Questions
Self-Control	1. Do you set goals and work to implement them through self-fulfillment and self-direction?
	2. Does the company give more autonomy to its employees so that they can realize self-control and self-management?
	3. Do companies have self-assessment programs in their appraisals?
Recognize an employee's potential	4. Are you able to use your imagination, creativity and ingenuity in your work?

Variables	Questions
	5. Does the organization provide challenging work to stimulate potential?
	6. Do companies incorporate a humanized management model to realize the potential of employees in management?
Responsibility	7. Do you fulfill your job responsibilities in your position?
	8. Has the enterprise conducted training on the awareness of the main responsibility?
	9. Does the company have a clear division of labor so that each employee understands his/her specific tasks and responsibilities?
Employee Participation	10. Have you ever been involved in the management of an enterprise, reform work?
	11. Have you integrated into the work and established a close relationship with the enterprise?
	12. Does the organization encourage employees to actively put forward their personal ideas and participate in building the organization?

**Table 3.3** Online Questionnaires for Research Objective 2 (Cont)

Variables	Questions
Working Relationship	13. Do companies establish long-term cooperative working relationships with their employees?
	14. Are you in a mutually equal, trusting working relationship?
	15. Does the organization improve the intimacy of working relationship through team cohesion?
Team Cohesion	16. Does the company have activities to improve team cohesion?
	17. Do companies emphasize the importance of team cohesion in their corporate culture?

	18. Do companies build a platform for team communication?
	19. Do you think that leader-employee exchange relationships are free and mutually respectful?
Mutual Respect	20. Do leaders fully support the utilization of your talents?
	21. Is the relationship between you and your leader inclined to respect, sharing, and understanding?
	22. Do you think leaders want to build close relationships with their employees?
Leader Expectation	23. Do you voluntarily fulfill all of your leaders' expectations of you?
	24. Do leaders set different expected roles based on individual employees?
	25. Are leaders emotionally supportive of their employees?
Team Support	26. Do leaders give timely support when you are frustrated?
	27. Do you think leaders have active participation in the work of the team?

### 3. Interview Questions for Research Objective 3

Three experts have been selected to provide guidelines and solutions for the issues identified in research objective 1) and the results from objective 2) These guidelines or solutions are anticipated to enhance the humanized management of small and medium-sized technology enterprises in Bishan District, Chongqing.

**Table 3.4** Interview Questionnaire for Research Objective 3

Questions
1. Based on your experiences, please give guidance on these problems with the company. (Recognize an employee's potential, Self-Control, Team cohesion, Welfare, Fairness)?
2. How can organizations effectively address the identified challenges and obstacles to humanized management in Bishan District?
3. What role do you see technology playing in advancing humanized management practices within small and medium-sized enterprises?
4. Can you share examples of successful strategies or initiatives that have positively

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impacted humanized management in other organizations, and how these could be adapted to the context of Bishan District?

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## Data Collection

To address all three research objectives, the data collection is divided into three parts as follows:

### 1. Interview Questionnaire via Telephone Call with 8 CEOs

Qualitative data were collected through interview questionnaires. Telephonic interviews with CEOs from the eight selected companies yielded authentic and insightful responses, significantly aiding in the identification of humanized management issues for further analysis.

### 2. Online Questionnaire with 400 Respondents

Quantitative data were obtained via online questionnaires, with a total of 400 distributed in November 2023. The returned questionnaires were then screened based on three key criteria:

- 1) Individuals with less than one year of experience in their current employer.
- 2) Questionnaire responses with large areas of the same assignment were eliminated.
- 3) Small and medium-sized enterprises were excluded from the survey due to their characteristics being different from those of governmental enterprises and monopolies.

After screening for valid information, invalid questionnaires are excluded.

### 3. Expert Questionnaire

Qualitative data were also collected from interviews conducted via online conferences with three experts, who provided insights and solutions regarding humanized management challenges.

## Data Analysis

### 1. Thematic Analysis

In this qualitative study, the following aspects are critically addressed:

**Phenomenon:** The increasing elimination of small and medium-sized technology enterprises.

**Literature Review:** Analysis of internal and external factors affecting small and medium-sized enterprises and the examination of humanized management.

**Theoretical Problem:** Existing research largely focuses on superficial aspects of humanized management without delving into specific issues or providing targeted solutions.

**Research Problem:** Identifying the specific causes underlying problems in humanized management.

**Motivation:** The role of small and medium-sized enterprises in addressing employment challenges for a significant portion of the population.

**Theoretical Perspective:** Examining small and medium-sized technological enterprises in a specific region provides insights into the broader market dynamics.

This research utilized Interpretive Thematic Analysis. Following the interviews, two primary steps were undertaken in this method:

1) The researcher meticulously reviewed each of the eight interview transcripts to comprehend the data.

2) The researcher identified recurring patterns of meaning and engaged in both initial and axial coding. This approach facilitated the identification of various codes and the exploration of their interconnections (Liamputtong, 2009, PP. 133-139).

## **2 Descriptive Analysis and Confirmatory Factor Analysis**

Using Excel, the researcher calculated the average, standard deviation, skewness, and kurtosis for the descriptive analysis.

1) The average primarily addresses its highest or lowest value. The lower indicates that the answers tend to be closer to 1 or 2, while the higher numbers tend to be closer to 4 or 5.

2) The standard deviation serves as a 'natural' measure of statistical dispersion. The smaller standard deviation indicates that majority of the respondents seem to answer close to the average.

3) In statistics, skewness refers to the degree and direction of asymmetry. A measure of skewness can be obtained from it. Normal distributions (skewness = 0), right-skewed distributions (skewness > 0), or left-skewed distributions (skewness < 0) could result from the procedure. It is considered normal to have skewness between -0.5 and 0.5. (Wu, 2022).

4) Kurtosis reflects the peak of the distribution. For a normal distribution, the kurtosis value is 3. The kurtosis value for a thick-tailed distribution is greater than 3, while the kurtosis value for a skinny-tailed distribution is less than 3. (Wu, 2022).

Once descriptive analysis passes criteria, the researcher continues to conduct CFA. Firstly, the validity and reliability are checked in Table 3.4. Then, the model fit is measured as shown in Table 3.5.

**Table 3.5** Measurement Model Criteria

Measurement Model	Criteria
Construct Reliability	CR (Composite Reliability) > 0.7
Convergent Validity	Factor loading <ul style="list-style-type: none"> <li>• All factor loadings should be statistically significant</li> <li>• Standardized loading estimates should be 0.5 or higher, ideally 0.7 or higher.</li> </ul> AVE > 0.5 CR > AVE (Average Variance Extracted)
Discriminant Validity	HTMT (Heterotrait-Monotrait) < 0.9 Fornell-Larcker Criterion <ul style="list-style-type: none"> <li>• SQRT(AVE) for each construct &gt; correlations between that construct and other construct</li> </ul>

Firstly, construct reliability, also referred to as composite reliability, evaluates whether all items within each latent variable consistently represent that variable. A value exceeding 0.70 indicates strong construct reliability for the latent variable.

Secondly, regarding convergent validity: By using standard regression weights, the factors (latent variables) are correlated with the observable items (explicit variables/measures). It can be concluded that a measurement relationship is significant and significant if the standardized loading coefficient exceeds 0.7 in absolute value. A convergent validity analysis was conducted using Average Variance Extracted (AVE) and Composite Reliability (CR). When AVE is greater than 0.5 and CR is greater than 0.7, it is considered to have high convergent validity. Furthermore, high convergent validity is indicated if either AVE or CR surpasses 0.7, provided that CR > AVE is also met.

Thirdly, A Fornell-Larcker method is used to determine the discriminant validity by comparing the square root of AVE with correlation coefficient sizes between



factors. In the table above, discriminant validity is also assessed via the Heterotrait-Monotrait ratio (HTMT).

**Table 3.6** Model Fit Criteria

Items	Criterion
X <sup>2</sup> /df	<0.5
RMSEA	<0.08
RMR	<0.08
GFI	>0.9
AGFI	>0.9
NFI	>0.9
RFI	>0.9
SFL	>0.7
CR	>0.7
AVE	>0.5
HTMT	<0.85

### 3. Content Analysis

Content analysis is employed in this qualitative study to examine the opinions of three experts, following these steps:

**Data Organization:** Post-telephone interviews, the collected data were transcribed and systematically organized.

**Reading and Initial Comprehension:** Each expert's responses were meticulously reviewed to grasp their fundamental concepts.

**Coding and Categorization:** Data coding represents a crucial phase in qualitative analysis. Key points, concepts, or themes from the experts' perspectives were identified to create a set of codes, subsequently grouped and categorized based on similarities.

**Theme Identification:** Themes were identified from the categorized codes. These themes primarily reflect the issues identified in Objectives I and II of the research.

**Analysis and Summary:** The identified themes and codes were synthesized for an in-depth analysis and comprehensive summary.