

## **A COMPARATIVE STUDY ON QC PROBLEM CONSCIOUSNESS OF EMPLOYEES FROM SMALL, MEDIUM-SIZED AND LARGE ENTERPRISES IN CHINA**

**YANG WANG<sup>1</sup>, ABULIMITI MAYILA<sup>2</sup>, WENZHEN SHI<sup>3</sup> & TAKASHI KONDOH<sup>4</sup>**

<sup>1,2</sup>Graduate School of Business Administration, Aichi Institute of Technology, Japan

<sup>3,4</sup>Faculty of Business Administration, Aichi Institute of Technology, Japan

### **ABSTRACT**

China has introduced and begun to implement the Japanese technique of Total Quality Management or TQM. Despite this, the level of production quality in China is poor. Although China has implemented the same quality management techniques and philosophy, a gap still exists between production quality in Japan and China. One of the reasons for this is that the degree of problem consciousness varies between employees of large enterprise and SMEs. Accordingly, the authors of this paper conducted a questionnaire targeting employees working in the Chinese manufacturing industry and analyzed the various impact factors contributing to the problem consciousness of quality management. This was done through a problem consciousness questionnaire survey based on a structural model of problem consciousness. The results of the analysis revealed the degree of problem consciousness within China's manufacturing industry, both employees of large enterprises and SMEs.

**KEYWORDS:** QC, Consciousness, Manufacturing, QC Problem Consciousness

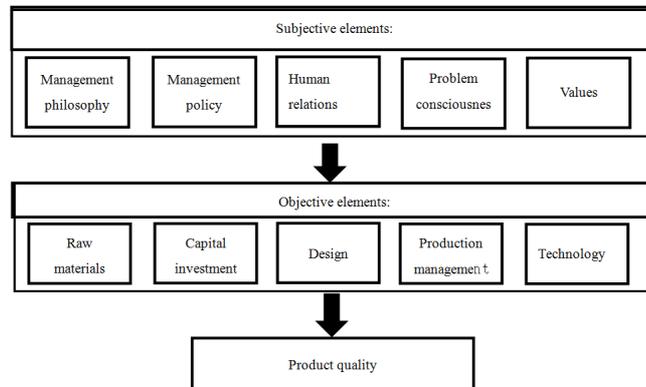
### **INTRODUCTION**

China produces products, which are sold worldwide. However, while China is considered to be the largest manufacturer of products in the world, quality control and overall quality level of the products produced are not of a first world standard. As a result, implementing quality control at a manufacturing level has become a major challenge in China. (Yajun Zhong, 2006).

In the early 1980s, large enterprises such as the Japanese company Toyota entered the country, bringing with them new production management methods. In the 1990s, ISO9001 (a quality standard) and ISO14001 (an environmental standard) were introduced. However, despite this, Chinese products were considered to be of poor quality. When it comes to the quality of the manufacturing process, as it is a comprehensive system, it is impossible to improve the intrinsic quality by introducing superficial ways of thinking and implementing a formal method. (Zenjiro Sawada, 1996).

The quality of manufacturing is determined by many subjective elements, including consciousness, cooperation, management philosophy, policy, human relations, values, etc. This is coupled with objective elements, such as raw materials, design, quality control, production control, production technology, process, equipment and work environment, all of which are thought to affect overall product quality. For example, the impressive results of quality control in Japan are considered to have been achieved through the cooperation and participation of all company employees. The prerequisite for participation by all members is that all the companies are quality-conscious. Quality control is an important task which involves investigating the constituent elements and influence factors relating to

the problem consciousness of all. In the course of this research, we analyze and consider the various influence factors contributing to the problem awareness of employees working in Chinese factories.



**Figure 1: Structural Diagram of the Influence Factors contributing to product Quality**

## PREVIOUS RESEARCH AND LITERATURE

Problem consciousness refers to the subjective perceptions, perspectives and ideas about objects and a subjective view of the current state of objects (Ito Makotoichi, 2008). Problem awareness connects deeply with human life. Awareness of the production quality is affected by research and development, the procurement of raw materials, product design, production technology and standardization, as well as responsibility, motivation, satisfaction, trust, relationships, spirit and philosophy (Wenzhen Shi, 2015). The authors studied production quality from the view of problem consciousness about the human way of life, because the awareness of quality management differs between each department in the production processes in this study. A standard perspective is necessary in order to compare problem consciousness about the human way of life because each person's subjective awareness is different. Confucianism has had a profound impact not only in China, but also in other countries such as Japan, South Korea, Vietnam and Singapore for 2,500 years (Burton Watson, 2007; Li Zhehou, 2004). Confucius proposed the method of problem-solving, focusing on the reality of everyday life, and becoming a man of noble character (or "junzi") in order to solve human social problems. Confucius provides a problem-solving system (Wenzhen Shi, 2015). Confucian problem consciousness is considered to be one of the standard human awareness models (Wenzhen Shi, 2015). Accordingly, the Confucian problem consciousness model will be applied to quality management in this study.

On the other hand, based on the Confucian problem consciousness model, the problem awareness survey centered on the perceptions, ideas, views and ways of life related to human nature. Survey items were designed to investigate the contents. The Confucian problem consciousness model consists of eleven items: the goal "Zhi 志", satisfaction "Le 樂", responsibility "Ren 仁", courtesy and manners "Li 礼", trust "Xin 信", correction "Guo 過", information and knowledge sharing "Xue 学", skills and tacit knowledge "Zhi 知", future "Shi 時", continuity "Shi 時", and forgiveness "Shu 恕".

Wang, Shi and Kondoh applied the Confucian problem consciousness structural model to the manufacturing industry. The study provided an analysis of QC awareness issues and influencing factors relating to employees working in Chinese SME manufacturing environments in an attempt to verify the validity of the model (Yang Wang, 2016).

## OBJECTIVES

Since the 1980s, large enterprises in China have begun to implement production management systems, such as TPS, TQC and TQM, as well as technology, equipment, funds and training (human resource development). On the other hand, SMEs were later than large enterprises in introducing quality control methods and production management systems. SMEs is progressing in their QC activities, gaining ISO 9000 accreditation (an international quality standard), technology and equipment, but are still considered to invest less in education. As large enterprises and SMEs differ in terms of technology, equipment, education and management, employee awareness is also different. Research on the differences in problem consciousness between large enterprises and employees of SMEs, and identifying the factors behind this, is vital in order to improve the problem awareness of employees. The present research conducted a questionnaire survey to distribute to employees working in Chinese manufacturing environments. Based on the results, we compared and analyzed differences in problem consciousness between employees of large Chinese enterprises and employees of SMEs.

## 目的METHODS

調査対象者及び調査方法 In order to understand employees' awareness of quality management, this study compiled a questionnaire survey to be distributed to employees working in China's manufacturing industry.

Participants came from large enterprise A company and eight SMEs. The investigation took place between March and May of 2016. In terms of investigation method, we distributed a total of 1,000 questionnaire surveys to all employees in large enterprise A company. From these, we received 298 usable responses (an effective response rate of 30%). We also distributed 1,000 questionnaire surveys to all employees across eight SME enterprises. The usable number of responses in this instance was 419 parts (an effective response rate of 42%).

The authors explained to the participants the purpose of this study, and that any use of the information gathered by this survey would comply with anonymity and privacy.

## RESULTS

Based on the Confucian problem consciousness model, 12 specific questions were designed to address key areas: problem consciousness (Do you think the quality of the company's products is related to the work of employees?); annual goals of the company (Do you know the company's annual goal?); satisfaction with the current work environment (Are you satisfied with your current job role?); responsibility to work (Are you responsible for your work?); attitude of colleagues and superiors (Are you anxious about the attitudes of your colleagues and superiors?); trust in colleagues and superiors (Do you trust your colleagues and boss?), correcting oneself when you make a mistake (Do you self-reflect when you make a mistake?); on-the-job training (Would you be interested in participating in lectures/training at work?); sharing experience and expertise with colleagues (Do you share your experience and expertise with your colleagues?); considering the future of the company (Do you think about the company's future?); continuation of employment with the company (Do you plan to continue working for this company for the foreseeable future?); and considering the position of co-workers and superiors (Do you consider the point of view of your coworkers and boss?). Respondents were asked to give their answers according to a five-point scale.

Based on the Confucian model, problem consciousness (Do you think the quality of the company's products is

related to the work of employees?) was the objective variable, and the other eleven items constitute explanatory variables which may account for an employee's level of problem consciousness. To substantiate the proposed Confucian problem consciousness model, the authors also measured the effects of a combination of dependent variables using multiple regression analysis. During this analysis, each independent variable was analyzed using the forced-entry method in order to explain the factors impacting the dependent variables. The analysis was conducted using SPSS 19.0 for Windows.

**Table 1: Description of The Samples** 具体的なモデルの内容(質問項目)は、なお、分析方法においては、孔子的問題意識構造モデルに基づいて、「会社の製品の品質が自分の仕事とつながっているか」を目的変数に、また、11個の項目を説明変数として、それぞれに重回帰分析を用分析及び考察を行う。連携実態調査の分析結果ResPsd

| 項目Item                    | 内容Contents                   | Large Enterprise |                     | SME Enterprises |                     |
|---------------------------|------------------------------|------------------|---------------------|-----------------|---------------------|
|                           |                              | 度数(人)Number      | パーセント(%)Percent (%) | 度数(人)Number     | パーセント(%)Percent (%) |
| 性別Sex                     | 男Male                        | 222222           | 74.574.5            | 251251          | 60.560.5            |
|                           | 女Female                      | 7676             | 25.525.5            | 164164          | 39.539.5            |
|                           | 合計Total                      | 298298           | 100100              | 415415          | 100.0100.0          |
| 年齢Age                     | 25歳未満<25years                | 283283           | 95.395.3            | 6060            | 14.414.4            |
|                           | 25-35歳25-35years             | 1313             | 4.44.4              | 194194          | 46.546.5            |
|                           | 35-45歳36-45years             | 11               | 0.30.3              | 115115          | 27.627.6            |
|                           | 45-55歳46-55years             | 00               | 00                  | 4444            | 10.610.6            |
|                           | 55歳以上56 years +              | 00               | 00                  | 44              | 1.01.0              |
|                           | 合計total                      | 297297           | 100100              | 417417          | 100.0100.0          |
| Years of service勤務年数      | 1年未満<1year                   | 164164           | 56.456.4            | 6161            | 14.614.6            |
|                           | 1-5年1-5years                 | 113113           | 38.838.8            | 190190          | 45.645.6            |
|                           | 5-10年6-10years               | 1212             | 4.14.1              | 114114          | 27.327.3            |
|                           | 10-15年11-15years             | 11               | 0.30.3              | 4040            | 9.69.6              |
|                           | 15年以上16years +               | 11               | 0.30.3              | 1212            | 2.92.9              |
|                           | 合計Total                      | 291291           | 100100              | 417417          | 100.0100.0          |
| 学歴Level of education      | 中学以下Under junior high school | 44               | 1.41.4              | 8383            | 19.919.9            |
|                           | 高中High school                | 2222             | 7.57.5              | 9595            | 22.722.7            |
|                           | 中专或技校Vocation school         | 183183           | 62.262.2            | 105105          | 25.125.1            |
|                           | 大学University                 | 8181             | 27.627.6            | 129129          | 30.930.9            |
|                           | 研究生以上Masters                 | 44               | 1.41.4              | 66              | 1.41.4              |
|                           | 合計Total                      | 294294           | 100100              | 418418          | 100.0100.0          |
| 職務Level of responsibility | スタッフStaff                    | 267267           | 91.491.4            | 315315          | 76.576.5            |
|                           | 中間管理者Intermediate Manager    | 55               | 1.71.7              | 3030            | 7.37.3              |

**Table 1: Contd.,**

| 項目Item | 内容Contents                 | Large Enterprise |                            | SME Enterprises |                             |
|--------|----------------------------|------------------|----------------------------|-----------------|-----------------------------|
|        |                            | 度数(人)<br>Number  | パーセント<br>(%)Percent<br>(%) | 度数(人)<br>Number | パーセント<br>(%)<br>Percent (%) |
|        | 部門責任者Department<br>Manager | 22               | 0.70.7                     | 3535            | 8.58.5                      |
|        | 会社責任者Responsible<br>person | 22               | 0.70.7                     | 66              | 1.51.5                      |
|        | その他Other                   | 1616             | 5.55.5                     | 2626            | 6.36.3                      |
|        | <b>合計Total</b>             | <b>292292</b>    | <b>100100</b>              | <b>412412</b>   | <b>100.0100.0</b>           |

性別においては、大手企業の男性社員が約 75 %になっている。

In terms of gender, approximately 75 percent larger company's employees were male. For 中小企業が 60 %であったために、大手企業の男性社員が多いことがわかった。SMEs, male employees accounted for 60%, less than that of the large enterprise. 従業員の年齢においては、In terms of age, a staggering 大手企業の 25 歳未満社員が 95 %で、中小企業の 35 歳未満社員が 6 割強であるため、大手企業の社員の方が若いことがわかった。95.3% of large enterprise employees were under 25 years of age. This is drastically different from the spread of ages in SMEs, wherein only 14.4% were under 25; thus it was found that large enterprises tend to employ a greater number of young employees. また、勤務年数においては、大手企業の社員が 5 年以内の割合が 95 %で、中小企業が 10 年以内の割合が 9 割弱であるため、中小企業の社員の方が長く働いている。In addition, In terms of years of service, over 95% of large enterprise employees have been with the company for five years or less, with only 4.7% having been with the company for 6 years or more. By contrast, 39.8% of SME employees have been with the company for 6 years or more, revealing that employees of small and medium-sized companies are more likely to stay with the company for longer. 学歴においては、大手企業と中In terms of level of education, a similar percentage of employees from both the large enterprise and SMEs have a university degree of higher (29% and 32.3% respectively). Interestingly, however, 19.9% of SME employees had only a less than high school education, as opposed to only 1.4% of those from the large enterprise, suggesting that SMEs employ a greater percentage of less qualified individuals. また、職務においては、大手企業の社員の中にスタッフは 9 割強で、中小企業社員の中にスタッフは 76 %であるため、大手企業の社員が主に一般的な社員・従業員である。In addition, in terms of duties, staff account for 91.4% of large enterprise employees; for SMEs, staff account for 76%. Employees of large enterprise are mainly located in the general staffs.

**Table 2: Results of Multiple Variable Regression Analysis**

|   | 大企业Mean<br>Large<br>Enterprise<br>Mean | 大企业n<br>Large<br>Enterprise | 中小企业<br>Mean SME s<br>Mean | 中小企<br>业N<br>SME sn | t            | p        |
|---|--|-----------------------------|----------------------------|---------------------|--------------|----------|
| Do you think the company's product quality is connected to the work of employees? | 3.9273.927                             | 289289                      | 4.2894.289                 | 412412              | 4.1294.129   | .000.000 |
| Do you know company's annual goal?  | 3.1333.133                             | 294294                      | 3.6433.643                 | 417417              | 6.1336.133   | .000.000 |
| Are you satisfied with your current job role?                                     | 3.2013.201                             | 291291                      | 3.0463.046                 | 412412              | 4.4814.481   | .000.000 |
| Are you responsible for your work?  | 4.3584.358                             | 293293                      | 4.4104.410                 | 417417              | .743.743     | .458.458 |
| Are you anxious about the attitudes of your colleagues and superiors?             | 4.0544.054                             | 297297                      | 3.8113.811                 | 419419              | -2.562-2.562 | .009.009 |
| Do you trust your colleagues and boss?  | 4.1184.118                             | 297297                      | 4.2164.216                 | 417417              | 1.3021.302   | .193.193 |
| Do you self-reflect when you make a mistake?                                      | 4.6244.624                             | 295295                      | 4.5404.540                 | 417417              | -1.333-1.333 | .183.183 |
| Would you be interested in participating in courses/training at work?             | 3.8783.878                             | 294294                      | 4.4254.425                 | 416416              | 6.4536.453   | .000.000 |
| Do you share your experience and expertise with your colleagues?                  | 4.1284.128                             | 289289                      | 4.4294.429                 | 410410              | 4.2824.282   | .000.000 |
| Do you think about the company's future?  | 2.0242.024                             | 296296                      | 2.4472.447                 | 416416              | 5.0435.043   | .000.000 |
| Do you plan to continue working for the company for the foreseeable future?       | 2.9212.921                             | 292292                      | 4.0414.041                 | 414414              | 12.76712.767 | .000.000 |
| Do you consider the point of view of your co-workers and boss?                    | 3.9833.983                             | 296296                      | 4.1944.194                 | 417417              | 2.5962.596   | .010.010 |

For each item of the Confucian problem consciousness model, Table 3 gives the average value and comparison result of major companies and SMEs. In terms of the average values for the large enterprise, the highest mean reported was 4.624 for self-reflection, followed by responsibility for work at 4.358. Additionally, sharing experience and expertise with colleagues, trusting one's colleagues and boss all record an average mean above 4. The lowest recorded average value was for thinking about the future of the company, with a mean of 2.024. Planning to continue working for the company also recorded an average value below 3.

For the question "Do you self-reflect when you make a mistake?", Employees of SMS recorded an average value of 4.540, which was the highest reported mean. Considering product quality as related to the work of employees, responsibility for one's work, trusting one's colleagues and boss, interest in participating in lectures and training, sharing experience and expertise with colleagues, planning to continue working for the company and considering the position of one's co-workers and boss all recorded average values of above 4. The lowest mean value was for thinking about the company's future, with an average of 2.447. (Burton Watson, 2007).

Comparing the average values from large enterprises and SMEs, no significant difference was found for being responsible for one’s work, trusting colleagues and superiors and self-reflecting when one makes a mistake. By contrast, a significant difference was observed in the topics. The large enterprise recorded higher average values than the SMEs for two items: satisfaction with one’s work role and anxiousness about the attitudes of colleagues and superiors. On the other hand, SMEs reported higher average values than the large enterprise for the majority of items, including considering product quality as relating to the work of employees, awareness of the company’s annual targets, responsibility for one’s work, trusting one’s colleagues and boss, interest in participating in courses and training, sharing experience and expertise with colleagues, thinking about the company’s future, planning to continue working for the company and considering the point of view of one’s co-workers and boss.

**Table 3: Comparative Analysis of Employees’ QC Awareness**

|   | Large enterprise<br>大企业Standardized Coefficients<br>Beta Beta | Large Enterprise<br>大企业pp | SME中小企<br>业Standardized Coefficients<br>Betas Beta | 中小企<br>业p<br>SMEs p |
|---|---|---------------------------|--|---------------------|
| Do you know the company's annual goal?                                      | -.083-.083  | .179.179                  | .073.073   | .103.103            |
| Are you satisfied with your current job role?                               | -.086-.086  | .146.146                  | -.146-.146   | .001.001            |
| Are you responsible for your work?  | .047.047  | .513.513                  | .041.041   | .518.518            |
| Are you anxious about the attitudes of your colleagues and superiors?       | .068.068  | .278.278                  | .075.075   | .121.121            |
| Do you trust your colleagues and boss?                                      | .020.02   | .782.782                  | -.021-.021   | .735.735            |
| Do you self-reflect when you make a mistake?                                | .016.016  | .799.799                  | .159.159   | .013.013            |
| Would you be interested in participating in courses/training at work?       | .180.180  | .007.007                  | .079.079   | .139.139            |
| Do you share your experience and expertise with your colleagues?            | .058.058  | .388.388                  | .115.115   | .046.046            |
| Do you think about the company's future?                                    | -.060-.060  | .325.325                  | -.027-.027   | .536.536            |
| Do you plan to continue working for the company for the foreseeable future? | .175.175  | .005.005                  | .259.259   | .000.000            |
| Do you consider the point of view of your co-workers and boss?              | .150.150  | .023.023                  | .121.121   | .024.024            |

孔子的問題意識構造モデルに基づいて、問題意識の影響要素においては、大手企業の場合は「仕事に関する講座・養成に参加したいか」「この会社で仕事を継続するか」「同僚や上司の立場で考えるか」の項目が有意な差にみとめられ、問題意識に影響を及ぼす。

Based on the Confucian problem consciousness model, willingness to participate in courses and training, planning to continue working for the company, and considering the point of view of one’s co-workers and boss was all items found to be significant in affecting the problem consciousness of employees of the large enterprise. For SME employees, factors found to be significant in affecting problem consciousness include satisfaction with one’s current job role, sharing experience and expertise with colleagues, self-reflecting on one’s mistakes, planning to continue working for the company and considering the point of view of one’s co-workers and boss. Two items, therefore, were common factors affecting the problem consciousness of employees from both the large enterprise and SMEs: planning to continue working for the company and considering the point of view of one’s co-workers and boss.

## DISCUSSIONS

### Basic Attributes

E of the large enterprise were generally found to be younger than SME employees. For large enterprises in Shenzhen, it is convenient to recruit young employees for the sake of lower wages. It is likely also that employing younger employees explains why the employees of the large enterprise had only been with the company for less than a year. Indeed, employees of SMEs tend to have been with the company for longer. University graduates are aiming for major corporations in pursuit of a higher salary, greater job stability and better career progression. However, because the competition between large enterprises is intense, despite an individual's educational background, many less qualified young employees are working in the field. Finally, there was no notable difference between sexes.

### Problem Consciousness

Based on the results of the analysis, each item was considered in relation to the Confucian problem consciousness model. The results are as follows. For satisfaction with one's current job role, the average value for the large enterprise is 3.201, and the average value for SMEs is 3.046 ( $p = 0.000$ ). In addition, for anxiousness about the attitudes of colleague's superiors, the average value for the large enterprise is 4.054, and the average value for SMEs is 3.811. As major companies are focusing on salary, working conditions, employee wellbeing, job stability, encouraging a feeling of belonging, organizational culture, etc., it can be said that they have better resources than SMEs. It transpired that major companies put emphasis on the self-satisfaction (Hirai Akiyo2012). Therefore, it is estimated that the satisfaction level of employees working in large enterprises is high. Work relationships and human relations are becoming more complicated and important in large enterprises. When performing their day-to-day work activities, employees pay attention to the way of speaking and the attitude of their colleagues and superiors at work, as it is necessary to conduct oneself appropriately in line the level of one's position with respect to the overall hierarchy of the organization (Burton Watson, 2007).

SMEs record higher average values than the large enterprise on seven items. For considering product quality and company image to be connected to their work, the mean value for the large enterprise is 3.927; by comparison, for SMEs, the mean value is 4.289 ( $p = 0.000$ ), employee training of SMEs is conscious than large enterprise. For large enterprises, it is commonplace for general employees to do as their boss tells them because the levels of raw materials, design, production control, technology etc. are high. It is reasonable to assume that quality consciousness is weaker for employees of the large enterprise than employees of SMEs because the former do not have the opportunity to directly affect quality themselves. On the other hand, because SMEs do not have the resources of large enterprises, it is speculated that it is easy for general employees of SMEs to participate in daily work activities, such as the production process and quality control.

For awareness of the company's annual target, the mean for the large enterprise is 3.133, and for SMEs 3.643 ( $p = 0.000$ ), suggesting that employees of small and medium-sized companies are more aware of company's annual goal. In SMEs, it is easier to convey the company's plan, target, etc. directly from the manager or administrator to the employee. Because the daily work of employees of SMEs involves a narrower range of activities than that of employees in large enterprises, it is easier to communicate and share information. It was found in an SME environment, there is a strong degree of consciousness to achieve the goals set by management. On the other hand, in a large enterprise, it can be said that employees are more focused on their work than wider company goals. It should be noted that, in terms of considering the position of co-workers and superiors, the average value for the large enterprise is 3.983, while the average value for

SMEs is 4.194. Because of the ease of communication in SMEs, employees can more easily put themselves in the position of co-workers and superiors. It is therefore inferred that conscious thinking is strong.

仕事に関する講座 For interest in participating in courses and training・養成に参加したいかについては、大手企業の、the average value for the large enterprise is 3.878, while the average value for SMEs is 4.425. For sharing experience and expertise with colleagues, the average value for the large enterprise is 4.128, while the average value for SMEs is 4.429. There is less opportunity for employee education in small and medium-sized companies when compared to large enterprises. Indeed, participation in educational activities, including on-the-job training and lectures, is essential to develop employees' skills and abilities. This is vital in order to improve quality and production. In addition, because SME employees tend to remain with the company for a significant number of years, it is possible for such employees share their experiences and expertise with younger employees. It was therefore found that the cooperative consciousness among SME employees is strong. On the other hand, since the large enterprise surveyed in this study has many young employees, their experiences and knowledge are at the same level, thus restricting their ability to share their skills and experience.

未来の会社を考えるかについては、大手企業の平均値が 2.024、中小企業の平均値が 2.447 である。For thinking about the company's future, the average value for the large enterprise is 2.024, and the average value for SMEs is 2.447. Because of the low average value in both cases, it can be said that employees working in both large enterprises and SMEs are not interested in the company's future. It is speculated that their lack of power causes employees to believe that thinking about the company's future development is a fruitless task. Nonetheless, this figure is higher for SME employees, as the company's future is more likely to impact of the future of employees. In addition, when considering whether to continue the work for the company, the average value for the large enterprise is 2.921, while the average value for SMEs is 4.041. This reflects the high degree of consciousness of SME employees, who is paying attention to the future potential of the company in order to make a conscious decision about whether to remain with the company or not.

#### 問題意識の影響要素の比較 **Comparison of Factors Influencing Problem Consciousness**

大手企業及び中小企業の社員に影響を及ぼす共通な影響要素が「この会社で仕事を継続するか」、「同僚や上司の立場で考えるか」であった。The common influencing factors affecting employees of large enterprises and SMEs were the desire to continue working for the company and thinking from the perspective of colleagues or superiors. Therefore, using the Confucian problem consciousness model, it is possible for the employees who participated in this survey to explain that planning to continue working for the company and thinking from the position of others (colleagues or bosses) affects problem awareness. For employees who are consciously planning to continue with the company, there is sense of belonging and desire for the company to perform better; this heightens employee consciousness, and the employee's ability to identify problems that exist within the company becomes stronger. Indeed, the employee may presume that by solving the company's problems, this will lead to greater job stability. Further, by considering the position of others (colleagues or bosses) rather than just your own, problem consciousness is likely to become stronger. In other words, if you put yourself in the position of others, it is thought that this will broaden your view and make it easier to identify problems, thus increasing problem consciousness.

孔子的問題意識構造モデルに基づいて、問題意識の影響要素においては、大手企業の場合は「仕事に関する講座・養成に参加したいか」の項目が有意な差にみとめられ、問題意識に影響を及ぼす。Based on the Confucian problem consciousness model, it was observed that for the large enterprise, interest in participating in courses and training was found to have a significant impact on problem awareness. Therefore, it can be said that the employees of large enterprises recognize that expertise and technology are indispensable when it comes to identifying problems in quality control and production management. Thus it is emphasized that participation in workshops, courses, training classes etc. will improve problem awareness.

In the case of SMEs, satisfaction with one's current job role, self-reflecting on mistakes, and sharing experience and expertise with colleagues were all items found to significantly impact problem consciousness. In other words, job satisfaction, reflection and sharing experience and expertise helps SME employees to develop their consciousness of problems concerning quality. Indeed, when employees are satisfied with their work situation, motivation will be high. Also, by working collaboratively with their colleagues, employees' will become more tech savvy and develop their skills. Consequently, employees will acquire the ability to reflect on their own mistakes and areas of weakness, which makes it easier for them to identify problems existing in the company. As a result, it is thought that the problem consciousness of employees becomes strong.

## CONCLUSIONS

孔子的問題意識構造モデル及びアンケート調査に基づいて、中国Based on the Confucian consciousness model, this study conducted a survey and performed a comparative analysis of the problem awareness of employees working in large Chinese enterprises and SMEs. Analysis of the results revealed that large enterprises are more concerned with employee satisfaction than SMEs are. This is related to the findings for employees' satisfaction with their current job role and courtesy, who are anxious about attitudes of their colleagues and superiors. Overall, employees of SMEs were found to be more problem-conscious than employees of large enterprise. In particular, the fact that SME employees were more concerned with the annual targets of the company, were more interested in participating in courses and training, and were more likely to share their experience and expertise with colleagues is related to the fact that they think about the future of the company.

また、大手企業及び中小企業の社員の問題意識には、仕事の継続性及び他人（同僚や上司）の立場で考えることが強調されている。In addition, it is important to consider the problem consciousness of employees from large enterprises and SMEs in terms of job continuity and other members of the company (i.e. Colleagues and bosses).製品の品質を向上するために、社員の問題意識を向上することが必要である。In order to improve the quality of products, it is necessary to first improve employees' problem awareness. For that reason, it is essential to devise measures to improve the stability and retention ratio of employees. It should be noted that, for employees of large enterprises, participating in technical training and courses will help to improve employee awareness and make issues apparent. In order to improve the awareness of quality, it is necessary for employees of large enterprises to participate in training and courses.

It should be noted that, for employees of SMEs, employee satisfaction, sharing one's experience and expertise is considered to affect an employee's problem awareness. Improving employee satisfaction and educating employees, such as through participation in a learning circle, is believed to facilitate improvements in quality.

Finally, faced with future challenges, it is important for Chinese companies to ascertain the awareness of their employees. Further, establishing a specific problem solving strategy will be necessary.

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