**CHAPTER 4**

**DATA ANALYSIS AND RESULTS**

**4.1 Introduction**

**4.2 Respondents’ Demographic Profile**

A total of 1452 surveys were administered to top-level managers in international SMEs in Iran, between March and October 2020. Following the preliminary data screening, 4.89 % of the completed surveys were discovered to have missing values. These surveys were omitted from further analysis, thus decreasing the number of usable surveys from 169 to 161. As highlighted in chapter 3, the methods utilized in the survey administration helped achieve a high overall rate of response (i.e. 12.33 %).

As illustrated in Table 4.1, the first demographic profile considered in this research was the size of the organization based on the number of employees, with 28% having 10 employees or less (45 respondents), 34.2% having 11 to 49 employees (55 respondents) and 37.9% having 50 to 99 employees (61 respondents). The majority of respondents were SMEs originated in Asia Pacific, with 56.5 % (91 respondents). This is expected since Iran has a closer trading relationship with countries in the region compared with others. The next region with the highest number of respondents were western Europe with 36.6 % (59 respondents), which is partly due to the many bilateral trade deals between some western European countries and Iran. This was followed by Eastern Europe with 5.6 % (9 respondents), and the rest were from other regions. Regarding the industry sector, 33.5 % of the respondents were in the manufacturing sector, while 28.6 % were in the service industry. The retail sector accounted for 18 % of the responses, followed by 16.1 % in agriculture. In terms of the market entry modes, joint ventures made up 31.7 % of the sample, followed by exporting with 23 % of the respondents. The other market entry avenues of wholly owned subsidiaries, licensing, and franchising made up 18 %, 16.1 % and 6.2 % respectively.

The suitability of the sampled population is determined, based on the descriptive statistics of the demographic profiles (see Table 4.1).

**Table 4.1**: Respondents’ Demographic Profiles

|  |  |  |
| --- | --- | --- |
| **Profile** | **Frequency (161)** | **Percentage (100%)** |
| **SME Size (number of employees)** | | |
| 10 or less | 45 | 28 |
| 11-49 | 55 | 34.2 |
| 50-99 | 61 | 37.9 |
| **Region of Origin** | | |
| Asia Pacific | 91 | 56.5 |
| Eastern Europe | 9 | 5.6 |
| Western Europe | 59 | 36.6 |
| Other | 2 | 1.2 |
| **Core Industry** | | |
| Service | 46 | 28.6 |
| Manufacturing | 54 | 33.5 |
| Retail | 29 | 18 |
| Agriculture | 26 | 16.1 |
| Other | 6 | 3.7 |
| **Market Entry Mode** | | |
| Exporting | 37 | 23 |
| Licensing | 26 | 16.1 |
| Franchising | 10 | 6.2 |
| Joint Venture | 51 | 31.7 |
| Wholly Owned Subsidiary | 29 | 18 |
| Other | 8 | 5 |

**4.3 Exploratory Data Analysis**

This Section includes the outcome of the descriptive statistics, test of normality and scale reliability for the industry forces (i.e., market uncertainty, market dynamism and competitive intensity); dynamic capabilities (i.e., sensing capability, seizing capability, reconfiguration capability); impact of sanctions, mode of entry, competitive advantage (i.e., cost advantage and differentiation advantage), and SMEs’ performance. The detailed descriptions of the statistical analyses for each of the variables are produced next.

**4.3.1 Market Dynamism**

The descriptive analysis for the market dynamism measurement items are summarized into means and standard deviations as illustrated in Table 4.2. The mean, standard deviation, skewness and kurtosis for all the items are shown in table 4.3. The overall skewness and kurtosis scores are less than ±1.0, which is lower than the cut-off criterion (see chapter 3), hence satisfying the normality assumption. One of the downsides of the lack of normality is inflation of the chi-square value. The chi-square goodness-of-fit statistic is deemed to be reliable if the skewness value is lower than 2.00, and the kurtosis value lower than 7.00 (West, Finch and Curran; 1995). Therefore, the normality for the overall measurement scale for market dynamism is ascertained.

For the overall scale, the mean score of 4.5894 implies that the consumers change their preferences about product features on regular basis and that international SMEs adapt their behaviour in response to these changes. Table 4.3 provides a summary of the descriptive statistics for the market dynamism scale.

|  |
| --- |
|  |

**Table 4.2:** Descriptive Statistics of Items for Market Dynamism

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | | | | |
| **Item Code** | **Item** | **Minimum** | **Maximum** | **Mean** | **Std. Dev.** |
| MD1 | 1. products offered. | 1 | 7 | 4.88 | 1.669 |
| MD2 | 2. sales strategies. | 1 | 7 | 4.63 | 1.713 |
| MD3 | 3. customer preferences about product features. | 1.0 | 7.0 | 4.776 | 1.7853 |
| MD4 | 4. customer expectations about product features. | 1.0 | 7.0 | 4.876 | 1.7740 |
| MD5 | 5. distribution arrangements. | 1.0 | 7.0 | 4.273 | 1.9653 |
| MD6 | 6. distribution strategies. | 1.0 | 7.0 | 4.161 | 2.0153 |
| MD7 | 7. competitive strategies. | 1.0 | 7.0 | 4.652 | 1.8549 |
| MD8 | 8. competitive intensity. | 1.0 | 7.0 | 4.590 | 1.8657 |
| MD9 | 9. organization’s sales volume. | 1.0 | 7.0 | 4.466 | 1.6318 |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

\* Standard Deviation

**Table 4.3:** Descriptive Statistics for Market Dynamism Scale

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Minimum** | **Maximum** | **Mean** | **Standard Deviation** | **Skewness** | **Kurtosis** |
| 1 | 7 | 4.5894 | 1.27863 | -0.528 | -0.710 |

**Correlations**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | MD.M | RU.M | MU.M | CI.M | SC.M | SizC.M | RC.M | DA.M | CA.M | IS.M |
| MD.M | Pearson Correlation | 1 | .542\*\* | .573\*\* | .647\*\* | -.247\*\* | -.248\*\* | -.350\*\* | -.303\*\* | -.335\*\* | .501\*\* |
| Sig. (2-tailed) |  | .000 | .000 | .000 | .002 | .002 | .000 | .000 | .000 | .000 |
|  |  |  |  |  |  |  |  |  |  |  |

**4.3.2 Regulatory Uncertainty**

The descriptive nalysis for the regulatory uncertainty measurement items are summarized into means and standard deviations as demonstrated in Table 4.4. Although, the overall kurtosis value for the items are slightly greater than 1, it is within the expected range of -2.0 and +3.5 (Lei and Lomax, 2005). Similarly, the skewness values are within the acceptable range, thus the distribution of the items does not violate the normality assumption. The mean score of 4.6289 for the overall scale, confirms the high regulatory uncertainty in the market. Table 4.6 shows the correlation for the items. As demonstrated in this table, the correlation for the items exceed the lowest cut-off criterion of 0.3 (Nunnally and Bernstein, 1994; Flynn et al., 1997). Below Tables presents the overall descriptive statistics for the scale.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Table 4.4:** Descriptive Statistics of Items for Regulatory Uncertainty | | | | | |
| **Item Code** | **Item** | Minimum | Maximum | Mean | Std. Dev. |
| RU1 | 1. are constant changes in regulatory policy. | 1.0 | 7.0 | 4.466 | 1.9236 |
| RU2 | 2. are constant currency fluctuations. | 1.0 | 7.0 | 5.273 | 1.7029 |
| RU3 | 3. are constant changes in the tax policy. | 1.0 | 7.0 | 4.565 | 1.9519 |
| RU4 | 4. are constant changes in monetary policy. | 1.0 | 7.0 | 4.211 | 2.0779 |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

\* Standard Deviation

**Table 4.5:** Descriptive Statistics for Regulatory Uncertainty Scale

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Minimum** | **Maximum** | **Mean** | **Standard Deviation** | **Skewness** | **Kurtosis** |
| 1 | 7 | 4.6289 | 1.56002 | -0.329 | -1.007 |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table 4.6:** Correlations | | | | | | | | | | | |
|  | | MD.M | RU.M | MU.M | CI.M | SC.M | SizC.M | RC.M | DA.M | CA.M | IS.M |
| RU.M | Pearson Correlation | .542\*\* | 1 | .548\*\* | .520\*\* | -.364\*\* | -.450\*\* | -.333\*\* | -.456\*\* | -.335\*\* | .593\*\* |
| Sig. (2-tailed) | .000 |  | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
|  |  |  |  |  |  |  |  |  |  |  |

**4.3.3 Market Uncertainty**

The descriptive analysis for the market uncertainty measurement items are summarized into means and standard deviations as illustrated in Table 4.6, 4.7 and 4.8. The skewness value is less than ±1.0, and the kurtosis is only slightly higher than 1, hence they are within the acceptable range to satisfy the normality assumption. Similar to regulatory uncertainty, international SMEs perceive market uncertainty to be high in their sector which is evidenced by the mean score of 4.4369 for the overall scale. However, in comparison to the mean score for learning goal orientation (4.65), the sampled respondents can be described as more learning focused than performance driven. The correlation for all the items exceeds the lowest criterion of 0.3 (Nunnally and Bernstein, 1994; Flynn et al., 1997). The below Tables summarize the descriptive statistics for the overall scale for market uncertainty.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Table 4.6:** Descriptive Statistics of Items for Market Uncertainty | | | | | |
| **Item Code** | **Item** | Minimum | Maximum | Mean | Std. Dev. |
| MU1 | 1. the cost of operation. | 1.0 | 7.0 | 4.528 | 1.7715 |
| MU2 | 2. the price of raw materials. | 1.0 | 7.0 | 4.416 | 1.9766 |
| MU3 | 3. the cost of labor. | 1.0 | 7.0 | 4.366 | 1.9225 |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

\* Standard Deviation

**Table 4.7:** Descriptive Statistics for Market Uncertainty Scale

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Minimum** | **Maximum** | **Mean** | **Standard Deviation** | **Skewness** | **Kurtosis** | **Cronbach Alpha** |
| 1 | 7 | 4.4369 | 1.56224 | -0.280 | -1.007 |  |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table 4.7:** Correlations | | | | | | | | | | | |
|  | | MD.M | RU.M | MU.M | CI.M | SC.M | SizC.M | RC.M | DA.M | CA.M | IS.M |
| MU.M | Pearson Correlation | .573\*\* | .548\*\* | 1 | .473\*\* | -.346\*\* | -.360\*\* | -.357\*\* | -.429\*\* | -.315\*\* | .523\*\* |
| Sig. (2-tailed) | .000 | .000 |  | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
|  |  |  |  |  |  |  |  |  |  |  |

**4.3.4 Competitive Intensity**

The means and the standard deviations for the 6 measurement items are summarized in table 4.8, 4.9, and 4.10. As demonstrated in Table 4.10, the correlations for the items exceed the lowest cut-off point of 0.3 (Nunnally and Bernstein, 1994; Flynn et al., 1997).

Furthermore, the overall skewness and kurtosis are less than the cut-off point. Therefore, the assumption of normality has not been violated in this scale. The mean for the overall scale is 4.6884, which suggests that the competitive intensity in the market is quite high. Table 4.9 presents the overall descriptive statistic for competitive intensity scale.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Table 4.8:** Descriptive Statistics of Items for Competitive Intensity | | | | | |
| **Item Code** | **Item** | Minimum | Maximum | Mean | Std. Devi. |
| CI1 | 1. there is a lot of competition among firms. | 1.0 | 7.0 | 5.000 | 1.7889 |
| CI2 | 2. aggressive business practices are normal. | 1.0 | 7.0 | 4.894 | 1.8255 |
| CI3 | 3. there are many competitors who introduce innovations. | 1.0 | 7.0 | 4.441 | 1.8502 |
| CI4 | 4. when a firm introduces an innovation the rest quickly copy the idea. | 1.0 | 7.0 | 4.820 | 1.7779 |
| CI5 | 5. price competition is a fixture of our industry. | 1.0 | 7.0 | 4.646 | 1.9053 |
| .CI6 | 6. there are many competitors who enter and exit the sector. | 1.0 | 7.0 | 4.329 | 1.7240 |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

\* Standard Deviation

**Table 4.9:** Descriptive Statistics for Competitive Intensity Scale

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Minimum** | **Maximum** | **Mean** | **Standard Deviation** | **Skewness** | **Kurtosis** | **Cronbach Alpha** |
| 1 | 7 | 4.6884 | 1.46287 | -0.394 | -0.730 |  |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **4.10:** Correlations | | | | | | | | | | | |
|  | | MD.M | RU.M | MU.M | CI.M | SC.M | SizC.M | RC.M | DA.M | CA.M | IS.M |
| CI.M | Pearson Correlation | .647\*\* | .520\*\* | .473\*\* | 1 | -.279\*\* | -.350\*\* | -.397\*\* | -.433\*\* | -.323\*\* | .509\*\* |
| Sig. (2-tailed) | .000 | .000 | .000 |  | .000 | .000 | .000 | .000 | .000 | .000 |
|  |  |  |  |  |  |  |  |  |  |  |

**4.3.5 Sensing Capability**

Table 4.10 contains the summary of the means and standard deviations of the measurement items for the level of sensing capability of the international SMEs. The sensing capability scale computed from the 6 items has a mean score of 4.7039 which indicates that the level of sensing capability of international SMEs in the market is high.

Table 4.11 shows the skewness and kurtosis score for the overall scale. For the overall scale, the skewness and kurtosis scores are within the acceptable range, thus the normality assumption is ascertained.

As shown in Table 4.12, the correlation for the items exceeds the lowest cut-off point of 0.3 (Nunnally and Bernstein, 1994; Flynn et al., 1997). The overall descriptive statistics for the scale is encapsulated in the below Tables.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Table 4.10:** Descriptive Statistics of Items for Sensing Capability | | | | | |
| **Item Code** | **Item** | Minimum | Maximum | Mean | Std. Dev. |
| SCI | 1. people participate in professional association activities. | 1.0 | 7.0 | 4.447 | 1.6952 |
| SC2 | 2. we use established processes to identify target market segments. | 1.0 | 7.0 | 4.702 | 1.6426 |
| SC3 | 3. we use established processes to identify changing customer needs. | 1.0 | 7.0 | 4.950 | 1.5804 |
| .SC4 | 4. we use established processes to identify customer innovation. | 1.0 | 7.0 | 4.410 | 1.8285 |
| SC5 | 5. we observe best practices in our sector. | 1.0 | 7.0 | 4.925 | 1.7768 |
| SC6 | 6. we gather economic information on our operations and operational environment. | 1.0 | 7.0 | 4.789 | 1.7407 |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

\* Standard Deviation

**Table 4.11:** Descriptive Statistics for Sensing Capability Scale

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Minimum** | **Maximum** | **Mean** | **Standard Deviation** | **Skewness** | **Kurtosis** | **Cronbach Alpha** |
| 1 | 7 | 4.7039 | 1.32563 | -0.554 | 0.529 |  |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **4.12:** Correlations | | | | | | | | | | | |
|  | | MD.M | RU.M | MU.M | CI.M | SC.M | SizC.M | RC.M | DA.M | CA.M | IS.M |
| SC.M | Pearson Correlation | -.247\*\* | -.364\*\* | -.346\*\* | -.279\*\* | 1 | .667\*\* | .553\*\* | .656\*\* | .627\*\* | -.354\*\* |
| Sig. (2-tailed) | .002 | .000 | .000 | .000 |  | .000 | .000 | .000 | .000 | .000 |
|  |  |  |  |  |  |  |  |  |  |  |

**4.3.6 Seizing Capability**

The below tables present the descriptive statistics for the seizing capability measurement items which are summarized into means and standard deviations. The overall scale for seizing capability has a mean value of 4.8509. This implies that the seizing capability of the sampled SMEs are high.

The skewness and kurtosis scores for the overall items are less than +/-1, which are less than the cut-off criterion, hence the distribution of the items are within the acceptable range to satisfy the normality assumption. Accordingly, the normality for the overall scale for seizing capability is ascertained. Moreover, the correlation for the items is higher than the lowest cut-off point of 0.3 (Nunnally and Bernstein, 1994; Flynn et al., 1997;).

The descriptive statistics for the overall scale for the 4-item seizing capability is presented below.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Table 4.12:** Descriptive Statistics of Items for Seizing Capability | | | | | |
| **Item Code** | **Item** | Minimum | Maximum | Mean | Std. Dev. |
| SizC1 | 1. invests in finding solutions for our customers. | 1.0 | 7.0 | 4.745 | 1.7863 |
| SizC2 | 2. adopts the best practices in our sector. | 1.0 | 7.0 | 4.950 | 1.7529 |
| SizC3 | 3. responds to defects pointed out by employees. | 1.0 | 7.0 | 4.944 | 1.7329 |
| SizC4 | 4. changes our practices when customer feedback gives us a reason to change. | 1.0 | 7.0 | 4.764 | 1.8355 |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

\* Standard Deviation

**Table 4.13:** Descriptive Statistics for Seizing Capability Scale

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Minimum** | **Maximum** | **Mean** | **Standard Deviation** | **Skewness** | **Kurtosis** |
| 1 | 7 | 4.8509 | 1.52182 | -0.381 | -0.941 |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Correlations** | | | | | | | | | | | |
|  | | MD.M | RU.M | MU.M | CI.M | SC.M | SizC.M | RC.M | DA.M | CA.M | IS.M |
| SizC.M | Pearson Correlation | -.248\*\* | -.450\*\* | -.360\*\* | -.350\*\* | .667\*\* | 1 | .542\*\* | .750\*\* | .582\*\* | -.383\*\* |
| Sig. (2-tailed) | .002 | .000 | .000 | .000 | .000 |  | .000 | .000 | .000 | .000 |
|  |  |  |  |  |  |  |  |  |  |  |

**4.3.7 Reconfiguration Capability**

Table 4.14 presents the descriptive statistics for the reconfiguration capability measurement items which are summarized into means and standard deviation.

Table 4.15 summarized the descriptive statistics for the overall scale. The skewness and kurtosis scores do not violate the normality assumption. The mean score of 4.2075 implies that the reconfiguration capabilities of international SMEs is relatively high. Based on Table 4.16 below, the correlations for all the items is above the minimum cut-off point of 0.3 (Nunnally and Bernstein, 1994; Flynn et al., 1997).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Table 4.14:** Descriptive Statistics of Items for Reconfiguration Capability | | | | | |
| **Item Code** | **Item** | Minimum | Maximum | Mean | Std. Dev. |
| RC1 | 1. we constantly implement new kinds of management methods. | 1.0 | 7.0 | 4.242 | 1.7881 |
| RC2 | 2. we frequently change our marketing strategy. | 1.0 | 7.0 | 4.012 | 1.7677 |
| RC3 | 3. we frequently change our marketing method. | 1.0 | 7.0 | 4.006 | 1.8624 |
| RC4 | 4. we substantially renew business processes. | 1.0 | 7.0 | 4.391 | 1.9045 |
| RC5 | 5. we constantly renew the ways of achieving our targets. | 1.0 | 7.0 | 4.385 | 1.6810 |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

\* Standard Deviation

**Table 4.15:** Descriptive Statistics for Reconfiguration Capability Scale

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Minimum** | **Maximum** | **Mean** | **Standard Deviation** | **Skewness** | **Kurtosis** | **Cronbach Alpha** |
| 1 | 7 | 4.2075 | 1.51045 | -0.111 | -1.100 |  |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **4.16:** Correlations | | | | | | | | | | | |
|  | | MD.M | RU.M | MU.M | CI.M | SC.M | SizC.M | RC.M | DA.M | CA.M | IS.M |
| RC.M | Pearson Correlation | -.350\*\* | -.333\*\* | -.357\*\* | -.397\*\* | .553\*\* | .542\*\* | 1 | .645\*\* | .603\*\* | -.269\*\* |
| Sig. (2-tailed) | .000 | .000 | .000 | .000 | .000 | .000 |  | .000 | .000 | .001 |
|  |  |  |  |  |  |  |  |  |  |  |

**4.3.8 Differentiation Advantage**

Table 4.16 and 4.17 presents the summary of the means and standard deviations of the measurement items for respondents’ perception of the differentiation advantage enjoyed by their firms. The overall skewness and kurtosis values for all the items are within the acceptable range to satisfy the normality assumption.Therefore, the normality of the overall scale for differentiation advantage is ascertained. Additionally, the overall mean score of 4.6886 for differentiation advantage indicates that international SMEs have a quite high differentiation advantage in terms of goods or services in their respective sectors.

The correlations for all the items are above the minimum limit of 0.3 (Nunnally and Bernstein, 1994; Flynn et al., 1997). The descriptive statistics for the 7-item scale for differentiation advantage are shown in the Tables below.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Table 4.16:** Descriptive Statistics of Items for Differentiation Advantage | | | | | |
| **Item Code** | **Item** | Minimum | Maximum | Mean | Std. Dev |
| DA1 | 1. provides better customer service than our competitors. | 1.0 | 7.0 | 4.839 | 1.8604 |
| DA2 | 2. is better in commercializing new products than our competitors. | 1.0 | 7.0 | 4.677 | 1.7557 |
| DA3 | 3. is more successful at retaining customers than our competitors. | 1.0 | 7.0 | 4.702 | 1.7387 |
| DA4 | 4. can display our technology know-how in our products. | 1.0 | 7.0 | 4.752 | 1.9073 |
| DA5 | 5. enjoys the image as a premium producer. | 1.0 | 7.0 | 4.758 | 1.8701 |
| DA6 | 6. can attract customers to pay higher prices for our products because of its better quality. | 1.0 | 7.0 | 4.453 | 1.9234 |
| DA7 | 7. is able to serve a new market segment. | 1.0 | 7.0 | 4.640 | 1.9253 |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

\* Standard Deviation

**Table 4.17:** Descriptive Statistics for Differentiation Advantage Scale

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Minimum** | **Maximum** | **Mean** | **Standard Deviation** | **Skewness** | **Kurtosis** |
| 1 | 7 | 4.6886 | 1.51370 | -0.490 | -0.961 |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Correlations** | | | | | | | | | | | |
|  | | MD.M | RU.M | MU.M | CI.M | SC.M | SizC.M | RC.M | DA.M | CA.M | IS.M |
| DA.M | Pearson Correlation | -.303\*\* | -.456\*\* | -.429\*\* | -.433\*\* | .656\*\* | .750\*\* | .645\*\* | 1 | .652\*\* | -.421\*\* |
| Sig. (2-tailed) | .000 | .000 | .000 | .000 | .000 | .000 | .000 |  | .000 | .000 |
|  |  |  |  |  |  |  |  |  |  |  |

**4.3.9 Cost Advantage**

A summary of the means and the standard deviation of the measurement items for cost advantage is given in Table 4.18.

Based on Table 4.19, overall, the skewness and kurtosis values for the items are less than ±1.0, which is less than the cut-off criterion, therefore the distribution for each of the items does not violate the normality assumption. Furthermore, the mean score of 4.4845 implies that the international SMEs obtain a greater level of cost advantage compared to their competitors in their sector.

As presented in Table 4.20, the correlations for all the items are higher than the minimum cut-off point of 0.3 (Nunnally and Bernstein, 1994; Flynn et al., 1997). The Tables below summarizes the descriptive statistics for the overall scale.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Table 4.18:** Descriptive Statistics of Items for Cost Advantage | | | | | |
| **Item Code** | **Item** | Minimum | Maximum | Mean | Std. Dev. |
| CA1 | 1. produces the products faster than our competitors. | 1.0 | 7.0 | 4.460 | 1.8234 |
| CA2 | 2. has lower production wastage than our competitors. | 1.0 | 7.0 | 4.329 | 1.7563 |
| CA3 | 3. utilizes better technology to operate more efficiently than our competitors. | 1.0 | 7.0 | 4.590 | 1.7120 |
| CA4 | 4. uses latest management philosophy to operate more effectively. | 1.0 | 7.0 | 4.410 | 1.8824 |
| CA5 | 5. has certification and recognition for an effective production system. | 1.0 | 7.0 | 4.466 | 1.7890 |
| CA6 | 6. has a tight production control to achieve consistent product quality. | 1.0 | 7.0 | 4.652 | 1.7687 |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

\* Standard Deviation

**Table 4.19:** Descriptive Statistics for Cost Advantage Scale

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Minimum** | **Maximum** | **Mean** | **Standard Deviation** | **Skewness** | **Kurtosis** | **Cronbach Alpha** |
| 1 | 7 | 4.4845 | 1.42227 | -0.362 | -0.778 |  |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **4.20:** Correlations | | | | | | | | | | | |
|  | | MD.M | RU.M | MU.M | CI.M | SC.M | SizC.M | RC.M | DA.M | CA.M | IS.M |
| CA.M | Pearson Correlation | -.335\*\* | -.335\*\* | -.315\*\* | -.323\*\* | .627\*\* | .582\*\* | .603\*\* | .652\*\* | 1 | -.282\*\* |
| Sig. (2-tailed) | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |  | .000 |
|  |  |  |  |  |  |  |  |  |  |  |

**4.3.10 Impact of Sanctions**

The summary of the descriptive statistics for the measurement items of impact of sanctions are presented in Table 4.20.

The overall kurtosis and skewness values are within the range of ±1 (Table 4.21), Therefore, the skewness and kurtosis values for all the items are less than the cut-off criterion, hence the skewness values are within the acceptable range, thus satisfying the normality assumption. Therefore, the normality for the overall scale for impact of sanctions is validated. Additionally, the overall mean score of 4.8245 for impact of sanctions scale suggests that the sanctions had an impact on the international SMEs’ operations.

As shown in Table 4.22, the correlation for all the items is above the lowest cut-off point of 0.3 (Nunnally and Bernstein, 1994; Flynn et al., 1997). The below Tables present the descriptive statistics for the overall scale.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Table 4.20:** Descriptive Statistics of Items for Impact of Sanctions | | | | | |
| **Item Code** | **Item** | Minimum | Maximum | Mean | Std. Dev. |
| IS1 | 1. the risk associated with sanctions is significant. | 1.0 | 7.0 | 4.863 | 1.6413 |
| IS2 | 2. the firms have taken steps to respond to the risks associated with sanctions. | 1.0 | 7.0 | 4.801 | 1.6272 |
| IS3 | 3. the sanctions have influence on the supply chain operations. | 1.0 | 7.0 | 4.671 | 1.9065 |
| IS4 | 4. the impact of the risks caused by sanctions are substantial. | 1.0 | 7.0 | 4.963 | 1.6804 |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

\* Standard Deviation

**Table 4.21:** Descriptive Statistics for Impact of Sanctions Scale

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Minimum** | **Maximum** | **Mean** | **Standard Deviation** | **Skewness** | **Kurtosis** | **Cronbach Alpha** |
| 1 | 7 | 4.8245 | 1.48609 | -0.425 | -0.672 |  |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Correlations** | | | | | | | | | | | |
|  | | MD.M | RU.M | MU.M | CI.M | SC.M | SizC.M | RC.M | DA.M | CA.M | IS.M |
| IS.M | Pearson Correlation | .501\*\* | .593\*\* | .523\*\* | .509\*\* | -.354\*\* | -.383\*\* | -.269\*\* | -.421\*\* | -.282\*\* | 1 |
| Sig. (2-tailed) | .000 | .000 | .000 | .000 | .000 | .000 | .001 | .000 | .000 |  |
|  |  |  |  |  |  |  |  |  |  |  |
| \*\*. Correlation is significant at the 0.01 level (2-tailed). | | | | | | | | | | | |

**4.3.11 Firm Performance**

The descriptive analysis for the firm performance measurement items are summarized into means and standard deviations, as illustrated in Table 4.22. The mean, standard deviation, skewness and kurtosis for all the items are shown in table 4.23. Even though, the kurtosis value for the items is greater than 1, it is still within the expected range of -2.0 and +3.5 (Lei and Lomax, 2005). Therefore, the overall distribution for the items does not violate the normality assumption. As A Result, the normality for the overall measurement scale for firm performance is ascertained.

The firm performance scale computed from the 8 items has a mean of 3.3012, which is an indication that the International SMEs have a relatively good performance in the market. The descriptive statistics for the scale for firm performance is given in Table 4.23.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Table 4.22:** Descriptive Statistics of Items for Firm Performance | | | | | |
| **Item Code** | **Item** | Minimum | Maximum | Mean | Std. Dev. |
| FP1 | 1. sales growth | 1.0 | 5.0 | 3.335 | 1.3645 |
| FP2 | 2. capturing market share | 1.0 | 5.0 | 3.224 | 1.3783 |
| FP3 | 3. profitability | 1.0 | 5.0 | 3.342 | 1.4014 |
| FP4 | 4. financial well-being | 1.0 | 5.0 | 3.224 | 1.4317 |
| FP5 | 5. financial stability | 1.0 | 5.0 | 3.149 | 1.4196 |
| FP6 | 6. efficiency | 1.0 | 5.0 | 3.472 | 1.2251 |
| FP7 | 7. customer loyalty | 1.0 | 5.0 | 3.540 | 1.2599 |
| FP8 | 8. Liquidity | 1.0 | 5.0 | 3.124 | 1.4176 |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

\* Standard Deviation

**Table 4.23:** Descriptive Statistics for Firm Performance Scale

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Minimum** | **Maximum** | **Mean** | **Standard Deviation** | **Skewness** | **Kurtosis** | **Cronbach Alpha** |
| 1 | 7 | 3.3012 | 1.12790 | -0.246 | -1.353 |  |

**4.4 Scale Development and Validation**

**4.4.1 Data Screening**

**4.4.1.1 Missing Data Analysis**

Due to the low ration of missing values (i.e., 4.89%), all surveys with missing values were omitted from further analysis (Hair et al., 2006). Consequently, the sample size was decreased to 161, which is considered to be an appropriate size for the intended SEM analysis.

**4.4.1.2 Outliers**

in order to ensure comparability, the data needs to be consistent and standardized. To this end, this study has used z scores, which assumes that the data is transformed as each variable has a mean of 0, and a standard deviation of 1. Using the z score involves isolating the outliers that can influence the data. Using this method, it was found that there were no outliers present. As a result, a total of 161 responses were used in the final analysis, which translated to a net response rate of 12.33%. This sample size is higher than the recommended size, as discussed in chapter 3.

**4.5 Preliminary Assessment for SEM - Exploratory Factor Analysis (EFA)**

As mentioned in chapter 3, EFA is a prerequisite to CFA in order to validate the non-significance of common method bias (CMB) and construct unidimensionality. The Harman’s single factor score in which all items (measuring latent variables) are loaded into one common factor, was applied in order to test for the presence of CMB (Podsakoff et al., 2003). The EFA was done with the data gathered from the final survey. This involved inserting all the variables into a one EFA statistical procedure based on unrotated factor solution. If the total variance for a single factor is less than 50%, it has no significant effect in the present context ('Introduction to SPSS', P. 42). The generated output revealed that the total variance is 36.377% which is less than 50%, thereby revealing that CMB does not impact the data.

**Table 4.22**: Results of the EFA for all the Constructs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Total Variance Explained** | | | | | | |
| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
| Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 22.554 | 36.377 | 36.377 | 22.554 | 36.377 | 36.377 |
| 2 | 6.229 | 10.046 | 46.423 |  |  |  |
| 3 | 3.101 | 5.002 | 51.425 |  |  |  |
| 4 | 2.127 | 3.431 | 54.856 |  |  |  |
| 5 | 1.803 | 2.907 | 57.763 |  |  |  |
| 6 | 1.704 | 2.749 | 60.512 |  |  |  |
| 7 | 1.508 | 2.433 | 62.945 |  |  |  |
| 8 | 1.461 | 2.357 | 65.301 |  |  |  |
| 9 | 1.321 | 2.130 | 67.431 |  |  |  |
| 10 | 1.200 | 1.936 | 69.367 |  |  |  |
| 11 | 1.105 | 1.783 | 71.150 |  |  |  |
| 12 | .995 | 1.605 | 72.755 |  |  |  |
| 13 | .909 | 1.467 | 74.221 |  |  |  |
| 14 | .884 | 1.426 | 75.647 |  |  |  |
| 15 | .874 | 1.410 | 77.057 |  |  |  |
| 16 | .829 | 1.337 | 78.394 |  |  |  |
| 17 | .777 | 1.253 | 79.648 |  |  |  |
| 18 | .704 | 1.136 | 80.784 |  |  |  |
| 19 | .692 | 1.116 | 81.899 |  |  |  |
| 20 | .616 | .993 | 82.893 |  |  |  |
| 21 | .610 | .984 | 83.877 |  |  |  |
| 22 | .598 | .965 | 84.842 |  |  |  |
| 23 | .586 | .946 | 85.787 |  |  |  |
| 24 | .511 | .824 | 86.611 |  |  |  |
| 25 | .487 | .786 | 87.397 |  |  |  |
| 26 | .462 | .746 | 88.143 |  |  |  |
| 27 | .444 | .716 | 88.859 |  |  |  |
| 28 | .419 | .676 | 89.535 |  |  |  |
| 29 | .376 | .606 | 90.142 |  |  |  |
| 30 | .371 | .598 | 90.740 |  |  |  |
| 31 | .352 | .567 | 91.307 |  |  |  |
| 32 | .331 | .534 | 91.841 |  |  |  |
| 33 | .323 | .521 | 92.362 |  |  |  |
| 34 | .314 | .507 | 92.869 |  |  |  |
| 35 | .294 | .474 | 93.343 |  |  |  |
| 36 | .286 | .461 | 93.805 |  |  |  |
| 37 | .272 | .439 | 94.244 |  |  |  |
| 38 | .268 | .433 | 94.677 |  |  |  |
| 39 | .243 | .391 | 95.068 |  |  |  |
| 40 | .237 | .382 | 95.450 |  |  |  |
| 41 | .227 | .366 | 95.816 |  |  |  |
| 42 | .220 | .355 | 96.171 |  |  |  |
| 43 | .210 | .339 | 96.510 |  |  |  |
| 44 | .200 | .323 | 96.833 |  |  |  |
| 45 | .184 | .296 | 97.129 |  |  |  |
| 46 | .176 | .284 | 97.413 |  |  |  |
| 47 | .161 | .259 | 97.672 |  |  |  |
| 48 | .148 | .238 | 97.910 |  |  |  |
| 49 | .142 | .228 | 98.139 |  |  |  |
| 50 | .136 | .219 | 98.357 |  |  |  |
| 51 | .128 | .207 | 98.564 |  |  |  |
| 52 | .117 | .188 | 98.752 |  |  |  |
| 53 | .106 | .172 | 98.924 |  |  |  |
| 54 | .102 | .165 | 99.088 |  |  |  |
| 55 | .094 | .151 | 99.239 |  |  |  |
| 56 | .085 | .137 | 99.376 |  |  |  |
| 57 | .083 | .134 | 99.510 |  |  |  |
| 58 | .078 | .125 | 99.636 |  |  |  |
| 59 | .066 | .107 | 99.743 |  |  |  |
| 60 | .064 | .104 | 99.846 |  |  |  |
| 61 | .049 | .079 | 99.925 |  |  |  |
| 62 | .046 | .075 | 100.000 |  |  |  |
| Extraction Method: Principal Component Analysis. | | | | | | |

Furthermore, all the measurement items corresponding to each construct were factor analysed in order to test for the unidimensionality of the constructs. Table 4.22 illustrates the extraction communalities which are estimates of the variance in each variable accounted for by the components. The communalities in this table are all high, which indicates that the extracted components represent the variables well. Moreover, Table 4.35 shows the component matrix which are the correlations between the variable and the component.  The correlations are outside the ±0.3 range, consequently, the factorability of the correlation matrix is justified for the present study.

|  |  |  |
| --- | --- | --- |
| **Communalities** | | |
|  | Initial | Extraction |
| 1. products offered. | 1.000 | .087 |
| 2. sales strategies. | 1.000 | .211 |
| 3. customer preferences about product features. | 1.000 | .178 |
| 4. customer expectations about product features. | 1.000 | .193 |
| 5. distribution arrangements. | 1.000 | .193 |
| 6. distribution strategies. | 1.000 | .211 |
| 7. competitive strategies. | 1.000 | .213 |
| 8. competitive intensity. | 1.000 | .263 |
| 9. organization’s sales volume. | 1.000 | .138 |
| 1. are constant changes in regulatory policy. | 1.000 | .306 |
| 2. are constant currency fluctuations. | 1.000 | .231 |
| 3. are constant changes in the tax policy. | 1.000 | .285 |
| 4. are constant changes in monetary policy. | 1.000 | .332 |
| 1. the cost of operation. | 1.000 | .311 |
| 2. the price of raw materials. | 1.000 | .223 |
| 3. the cost of labor. | 1.000 | .267 |
| 1. there is a lot of competition among firms. | 1.000 | .360 |
| 2. aggressive business practices are normal. | 1.000 | .238 |
| 3. there are many competitors who introduce innovations. | 1.000 | .229 |
| 4. when a firm introduces an innovation the rest quickly copy the idea. | 1.000 | .311 |
| 5. price competition is a fixture of our industry. | 1.000 | .244 |
| 6. there are many competitors who enter and exit the sector. | 1.000 | .349 |
| 1. people participate in professional association activities. | 1.000 | .168 |
| 2. we use established processes to identify target market segments. | 1.000 | .276 |
| 3. we use established processes to identify changing customer needs. | 1.000 | .350 |
| 4. we use established processes to identify customer innovation. | 1.000 | .383 |
| 5. we observe best practices in our sector. | 1.000 | .402 |
| 6. we gather economic information on our operations and operational environment. | 1.000 | .483 |
| 1. invests in finding solutions for our customers. | 1.000 | .483 |
| 2. adopts the best practices in our sector. | 1.000 | .385 |
| 3. responds to defects pointed out by employees. | 1.000 | .414 |
| 4. changes our practices when customer feedback gives us a reason to change. | 1.000 | .469 |
| 1. we constantly implement new kinds of management methods. | 1.000 | .403 |
| 2. we frequently change our marketing strategy. | 1.000 | .338 |
| 3. we frequently change our marketing method. | 1.000 | .330 |
| 4. we substantially renew business processes. | 1.000 | .420 |
| 5. we constantly renew the ways of achieving our targets. | 1.000 | .402 |
| 1. provides better customer service than our competitors. | 1.000 | .396 |
| 2. is better in commercializing new products than our competitors. | 1.000 | .434 |
| 3. is more successful at retaining customers than our competitors. | 1.000 | .563 |
| 4. can display our technology know-how in our products. | 1.000 | .537 |
| 5. enjoys the image as a premium producer. | 1.000 | .621 |
| 6. can attract customers to pay higher prices for our products because of its better quality. | 1.000 | .455 |
| 7. is able to serve a new market segment. | 1.000 | .393 |
| 1. produces the products faster than our competitors. | 1.000 | .373 |
| 2. has lower production wastage than our competitors. | 1.000 | .402 |
| 3. utilizes better technology to operate more efficiently than our competitors. | 1.000 | .254 |
| 4. uses latest management philosophy to operate more effectively. | 1.000 | .334 |
| 5. has certification and recognition for an effective production system. | 1.000 | .393 |
| 6. has a tight production control to achieve consistent product quality. | 1.000 | .436 |
| 1. the risk associated with sanctions is significant. | 1.000 | .278 |
| 2. the firms have taken steps to respond to the risks associated with sanctions. | 1.000 | .280 |
| 3. the sanctions have influence on the supply chain operations. | 1.000 | .255 |
| 4. the impact of the risks caused by sanctions are substantial. | 1.000 | .351 |
| 1. sales growth | 1.000 | .655 |
| 2. capturing market share | 1.000 | .501 |
| 3. profitability | 1.000 | .626 |
| 4. financial well-being | 1.000 | .657 |
| 5. financial stability | 1.000 | .643 |
| 6. efficiency | 1.000 | .572 |
| 7. customer loyalty | 1.000 | .449 |
| 8. Liquidity | 1.000 | .616 |
| Extraction Method: Principal Component Analysis. | | |

|  |  |
| --- | --- |
| **Component Matrixa** | |
|  | Component |
| 1 |
| 1. products offered. | -.295 |
| 2. sales strategies. | -.459 |
| 3. customer preferences about product features. | -.422 |
| 4. customer expectations about product features. | -.439 |
| 5. distribution arrangements. | -.439 |
| 6. distribution strategies. | -.459 |
| 7. competitive strategies. | -.462 |
| 8. competitive intensity. | -.512 |
| 9. organization’s sales volume. | -.371 |
| 1. are constant changes in regulatory policy. | -.553 |
| 2. are constant currency fluctuations. | -.481 |
| 3. are constant changes in the tax policy. | -.534 |
| 4. are constant changes in monetary policy. | -.576 |
| 1. the cost of operation. | -.558 |
| 2. the price of raw materials. | -.472 |
| 3. the cost of labor. | -.517 |
| 1. there is a lot of competition among firms. | -.600 |
| 2. aggressive business practices are normal. | -.487 |
| 3. there are many competitors who introduce innovations. | -.478 |
| 4. when a firm introduces an innovation the rest quickly copy the idea. | -.558 |
| 5. price competition is a fixture of our industry. | -.494 |
| 6. there are many competitors who enter and exit the sector. | -.591 |
| 1. people participate in professional association activities. | .409 |
| 2. we use established processes to identify target market segments. | .525 |
| 3. we use established processes to identify changing customer needs. | .592 |
| 4. we use established processes to identify customer innovation. | .619 |
| 5. we observe best practices in our sector. | .634 |
| 6. we gather economic information on our operations and operational environment. | .695 |
| 1. invests in finding solutions for our customers. | .695 |
| 2. adopts the best practices in our sector. | .621 |
| 3. responds to defects pointed out by employees. | .644 |
| 4. changes our practices when customer feedback gives us a reason to change. | .685 |
| 1. we constantly implement new kinds of management methods. | .635 |
| 2. we frequently change our marketing strategy. | .582 |
| 3. we frequently change our marketing method. | .575 |
| 4. we substantially renew business processes. | .648 |
| 5. we constantly renew the ways of achieving our targets. | .634 |
| 1. provides better customer service than our competitors. | .629 |
| 2. is better in commercializing new products than our competitors. | .659 |
| 3. is more successful at retaining customers than our competitors. | .750 |
| 4. can display our technology know-how in our products. | .733 |
| 5. enjoys the image as a premium producer. | .788 |
| 6. can attract customers to pay higher prices for our products because of its better quality. | .674 |
| 7. is able to serve a new market segment. | .627 |
| 1. produces the products faster than our competitors. | .611 |
| 2. has lower production wastage than our competitors. | .634 |
| 3. utilizes better technology to operate more efficiently than our competitors. | .504 |
| 4. uses latest management philosophy to operate more effectively. | .578 |
| 5. has certification and recognition for an effective production system. | .627 |
| 6. has a tight production control to achieve consistent product quality. | .660 |
| 1. the risk associated with sanctions is significant. | -.528 |
| 2. the firms have taken steps to respond to the risks associated with sanctions. | -.530 |
| 3. the sanctions have influence on the supply chain operations. | -.505 |
| 4. the impact of the risks caused by sanctions are substantial. | -.592 |
| 1. sales growth | .809 |
| 2. capturing market share | .708 |
| 3. profitability | .791 |
| 4. financial well-being | .811 |
| 5. financial stability | .802 |
| 6. efficiency | .756 |
| 7. customer loyalty | .670 |
| 8. Liquidity | .785 |
| Extraction Method: Principal Component Analysis. | |
| a. 1 components extracted. | |