

# Analysis of Performance Appraisal Systems Used in the Manufacturing Industries of Punjab

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## Abstract

Achievement of organizational goals primarily calls for an effective utilization of human resources besides other resources. Pertinently, organizational goals can be achieved by taking into consideration the nature, abilities, and limitations of the manpower, enabling them to actualize their full potential, utilizing them fully for the growth of the organization, maintaining their quality, and integrating them with other resources. The performance appraisal system is a system of eliciting feedback, benchmarking it, communicating the same to the employees to bring holistic development in them besides evaluating the potential of employees. The present study aimed to analyze the performance appraisal system being practiced in industries of Punjab besides identifying the factors affecting the same.

**Keywords:** human resource development, performance appraisal, dominant industries, manufacturing sector, feedback

**JEL Classification:** M00, M10, M54

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Economic growth entails social and economic change that transforms an economy from an agrarian to an industrialized one. In this process of transition, both the social as well as economic changes tend to associate with technological innovation. It leads to the re-organization of an economy for the purpose of manufacturing (Sullivan & Sheffrin, 2003). Industrialization results in a philosophical change, wherein people attain a different attitude towards their perception of nature, and a sociological process of ubiquitous rationalization. History reveals that all the developed nations of the world broke the vicious circle of underdevelopment by industrialization. Sutcliffe (1971) stated that in most of the countries, it is not possible to achieve high levels of income without industrialization. Hoffman (1958) considered industrialization as a gradual process, but for the purpose of analysis, he divided it into three stages, that is, dominance of consumer-goods industries, increased importance of capital-goods industries, and balance of consumer-goods industries and capital-goods industries with a tendency for the capital-goods industries to expand more rapidly than the consumer-goods industries. Keeping in mind the importance of industries for a large economy like India, our first Prime Minister, Pandit Jawaharlal Nehru kept the development of basic and heavy industries under government control. Furthermore, the second Five Year Plan focused more on the development of heavy industries. Industrial growth and development has remained a vital issue in almost all the plans. Since the study focuses on the state of Punjab, we have restricted our analysis accordingly.

Industrial development in Punjab after independence took place in phases. Cycle-parts and hosiery industries were established in the 1950s and 1960s. With the culmination of green revolution, agriculture-based industries like farm machinery began to develop. Auto parts and electronic items industries saw a boom in the 1970s, and

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during the 1980s, resource-based industries such as food processing, edible and non-edible oils, vanaspati and sugar mushroomed up in large numbers ("Industrial Development Chapter 6," n.d.). Population redistribution in the state was strongly influenced by political changes in the form of territorial reorganization and by technological changes - by way of allowing a greater use of land and water resources. This led to a dynamic system of interdependencies resulting in a higher level of agricultural productivity, agro-based industrialization, and a balanced pattern of urbanization during the first couple of decades since independence (Kundu & Bhatia, 2002). It has been argued that the state of Punjab has suffered in terms of industrialization due to policy induced barriers and constrained private sector initiatives through allocation of licenses and public sector investments (Singh, 2006). However, recent reports and surveys have highlighted the conditions conducive for business. The year 2013 saw national and international agencies like RBI, CRISIL, and World Bank claiming better prospects for industrialization of the state. RBI further announced Punjab as the 3rd most attractive destination for new investments in India in 2012-13. International rating agency CRISIL declared Punjab as the most prosperous state in India, and Ludhiana was identified as the best place for doing business in India by the World Bank ("Progressive Punjab investors summit to add impetus to state's growth-Sukhbir," 2013). To accelerate the pace of growth, experts acknowledge the development of human resources. Human resource development (HRD) helps to build competencies in each and every individual working in an organization. Rao (1991) brought out that primary processes or subsystems of HRD comprise of performance appraisal, potential appraisal and development, feedback and performance coaching, training, career planning, employee welfare, quality of work life, rewards, organizational development and system development, and human resource information.

The present study focuses on performance appraisal, a useful sub-system of the HRD process. Managements (these days) have accepted the responsibility of developing their employees, and performance appraisal facilitates the achievement of this goal. Performance appraisal is one of the human resource management (HRM) tools used to evaluate the job performance of employees (Dessler, 2011; Mondy, 2002; Tompkins, 1995). Performance appraisal systems are one of the most important constituents of performance management, which has a direct impact on organizational performance (Indradevi, 2012). In spite of the existence of a number of appraisal systems, perceived fairness is the most important determinant of the applicability of these appraisal systems (Ranade & Kumar, 2011). The present study was undertaken to fulfill the following objectives:

- (1) To find out the effective variables influencing performance appraisal systems,
- (2) To test the importance of selected variables in influencing performance appraisal systems,
- (3) To give recommendations for effective implementation of performance appraisal systems.

## Database and Methodology

For the purpose of this study, five dominant industries of Punjab were identified on the basis of National Industrial Classification (NIC) 2008 for the year 2008-09. Data for the same were obtained from the Annual Survey of Industries for the year 2008-09 supplied by the Ministry of Statistics and Programme Implementation, according to which, a total of 56 industries existed in the state of Punjab. An industry performing well in terms of one of the indicators does not assure its supremacy in all the variables. Henceforth, in order to find out the genuinely dominant industries of the state, top industries in terms of number of factories, total output, invested capital, number of persons engaged, and wages and salaries were identified and compared.

In order to obtain first-hand information with respect to performance appraisal systems, we randomly picked 16 units from the dominant five industries spread throughout the state. Data were collected during 2011-12 and 2012-13. Furthermore, a questionnaire was administered to five supervisor/officer/executive level employees in each of the selected units, taking the sample size to 100 respondents, but despite our best efforts, we could receive only 79 duly filled questionnaires. To find out the effective variables contributing to the performance appraisal systems, factor analysis technique was applied. Twenty three variables, selected after reviewing the relevant literature, were included in the questionnaire. In order to remove biasedness among the responses, weighted mean

was calculated, wherein the communalities derived from factor analysis were taken as weights and  $x$  is the response.

$$\bar{x} = \frac{\sum_{i=1}^n w_i x_i}{\sum_{i=1}^n w_i}$$

Furthermore, to test the importance of selected variables affecting performance appraisal systems, the Kruskal-Wallis test was applied :

$$H = \frac{12}{n(n+1)} \sum_{j=1}^k \frac{R_j^2}{n_j} - 3(n+1)$$

where,

$k$  = the number of groups,

$n_j$  is the size of the  $j$ th group,

$R_j$  is the rank sum for the  $j$ th group

and  $n$  is the total sample size.

Hypotheses set for the purpose of the Kruskal-Wallis test :

➤  $H_0$ : Variables affecting performance appraisal are equally important.

➤  $H_1$ : Variables affecting performance appraisal are not equally important.

□

## Dominant Industries in Punjab

Percentage share of different industries in terms of the number of factories, invested capital, total output, number of persons engaged, and wages and salaries, including employer's contribution are shown in the Table 1. It is evident from the Table 1 that manufacture of grain mill products, starches, and starch products (106), spinning, weaving, and finishing of textiles (131), manufacture of basic iron and steel (241), and manufacture of transport equipment n.e.c. (309) figured in all the lists followed by manufacture of knitted and crocheted apparel (143) that figured amongst dominant industries in at least four variables (except total output). Henceforth, the units were randomly selected from these dominant industries for the purpose of further analysis. The list of the units is appended in the Annexure 1. The data so obtained is analyzed in the following sections.

## Factors Affecting Performance Appraisal

For the purpose of analysis, 23 variables affecting the performance appraisal system were selected, and the description of the variables is given in the Annexure II. Two tests - Kaiser Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of approximation were applied to check if factor analysis could be applied or not (Table 2). The Kaiser- Meyer-Olkin measure of sampling adequacy is a statistic that indicates proportion of variance in variables that might be caused by underlying factors. Values greater than 0.50 generally indicate that factor analysis is useful with the data. If the value is less than 0.50, the results of the factor analysis will not be useful. Bartlett's test of sphericity tests the hypothesis that the correlation matrix is an identity matrix, and indicates that the variables are unrelated and, therefore, are unsuitable for structure detection. Small values (as in this case  $0.00 < 0.05$ ) indicate that factor analysis will be useful for the given data. High value of chi square with .000 significance level implies that the correlation matrix is not an identity matrix, which further reasserts that factor analysis is appropriate. Both these tests permitted the use of factor analysis for data reduction in our case.

**Table 1. Share of Different Industries of Punjab ( in %)**

| Sr.No | Industry Name   | Industry Code | Number of Factories | Invested Capital | Total Output | Number of persons engaged | Wages and salaries including employer's contribution |
|-------|---|---------------|---------------------|------------------|--------------|---------------------------|--|
| 1     | Support activities to agriculture and post-harvest crop activities  | 016           | 1.31                | 0.28             | 0.71         | 0.95                      | 0.31   |
| 2     | Processing and preserving of meat   | 101           | 0.09                | 0.75             | 0.99         | 0.46                      | 0.61   |
| 3     | Processing and preserving of fruits and vegetables  | 103           | 0.76                | 1.97             | 0.60         | 0.73                      | 0.63   |
| 4     | Manufacturing vegetable and animal oils and fats  | 104           | 0.74                | 1.90             | 3.44         | 1.01                      | 0.93   |
| 5     | Manufacture of dairy products   | 105           | 0.49                | 1.49             | 2.78         | 1.25                      | 2.91   |
| 6     | Manufacture of grain mill products, starches and starch products  | 106           | <b>17.67</b>        | <b>11.57</b>     | <b>8.57</b>  | <b>10.92</b>              | <b>5.10</b>  |
| 7     | Manufacture of other food products  | 107           | 0.66                | 3.18             | 1.49         | 2.34                      | 3.69   |
| 8     | Manufacture of prepared animal feeds  | 108           | 0.38                | 0.45             | 0.70         | 0.47                      | 0.46   |
| 9     | Manufacture of beverages  | 110           | 0.79                | <b>3.34</b>      | <b>4.86</b>  | 1.99                      | 2.53   |
| 10    | Spinning, weaving, and finishing of textiles  | 131           | <b>5.07</b>         | <b>18.91</b>     | <b>11.43</b> | <b>12.38</b>              | <b>13.23</b>   |
| 11    | Manufacture of other textiles   | 139           | 2.75                | <b>5.15</b>      | <b>3.59</b>  | <b>3.53</b>               | 3.37   |
| 12    | Manufacture of wearing apparel, except fur apparel  | 141           | 2.02                | 2.61             | 1.14         | 2.72                      | 2.52   |
| 13    | Manufacture of knitted and crocheted apparel  | 143           | <b>3.70</b>         | <b>3.49</b>      | 2.61         | <b>5.42</b>               | <b>5.20</b>  |
| 14    | Tanning and dressing of leather; manufacture of luggage, handbags, saddlery and harness; dressing and dyeing of fur | 151           | 0.42                | 0.31             | 0.30         | 0.23                      | 0.21   |
| 15    | Manufacture of footwear   | 152           | 1.09                | 0.26             | 0.29         | 0.53                      | 0.39   |
| 16    | Sawmilling and planing of wood  | 161           | 0.72                | 0.01             | 0.02         | 0.07                      | 0.03   |
| 17    | Manufacture of products of wood, cork, straw, and plaiting materials  | 162           | 1.10                | 0.12             | 0.11         | 0.35                      | 0.20   |
| 18    | Manufacture of paper and paper products   | 170           | 2.31                | <b>5.06</b>      | 2.52         | 2.28                      | 2.89   |
| 19    | Printing and service activities related to printing   | 181           | 0.50                | 0.03             | 0.03         | 0.15                      | 0.14   |
| 20    | Manufacture of coke oven products   | 191           | 0.11                | 0.01             | 0.01         | 0.02                      | 0.01   |
| 21    | Manufacture of basic chemicals, fertilizers, and nitrogen compounds, plastics and synthetic rubber in primary forms | 201           | 0.86                | <b>5.49</b>      | <b>3.61</b>  | 1.67                      | <b>5.17</b>  |
| 22    | Manufacture of other chemical products  | 202           | 0.59                | 0.57             | 0.77         | 0.69                      | 1.01   |
| 23    | Manufacture of man-made fibres  | 203           | 0.07                | 0.72             | 0.53         | 0.26                      | 0.47   |
| 24    | Manufacture of pharmaceuticals, medicinal chemicals, and botanical products   | 210           | 0.65                | <b>4.10</b>      | 2.34         | 1.02                      | 3.00   |
| 25    | Manufacture of rubber products  | 221           | 1.19                | 1.30             | 1.84         | 2.36                      | 2.40   |
| 26    | Manufacture of plastics products  | 222           | 1.04                | 0.25             | 0.35         | 0.37                      | 0.26   |
| 27    | Manufacture of glass and glass products   | 231           | 0.05                | 0.01             | 0.01         | 0.04                      | 0.03   |
| 28    | Manufacture of non-metallic mineral products n.e.c  | 239           | <b>16.48</b>        | 1.95             | 2.32         | <b>13.63</b>              | <b>5.60</b>  |

|              |  |       |               |               |               |               |               |
|--------------|--|-------|---------------|---------------|---------------|---------------|---------------|
| 29           | Manufacture of basic iron and steel  | 241   | <b>4.34</b>   | <b>5.53</b>   | <b>15.11</b>  | <b>4.43</b>   | <b>4.21</b>   |
| 30           | Manufacture of basic precious and other non-ferrous metals   | 242   | 0.18          | 0.06          | 0.19          | 0.06          | 0.05          |
| 31           | Casting of metals  | 243   | <b>3.33</b>   | 1.40          | 1.83          | 1.77          | 1.99          |
| 32           | Manufacture of structural metal products, tanks, reservoirs, and steam generators                            | 251   | 0.72          | 0.50          | 0.78          | 0.73          | 0.72          |
| 33           | Manufacture of other fabricated metal products; metalworking service activities                              | 259   | <b>6.27</b>   | 2.90          | <b>3.55</b>   | <b>4.81</b>   | <b>4.39</b>   |
| 34           | Manufacture of electronic components   | 261   | 0.10          | 0.05          | 0.07          | 0.10          | 0.10          |
| 35           | Manufacture of consumer electronics  | 264   | 0.12          | 0.15          | 0.41          | 0.25          | 0.48          |
| 36           | Manufacture of measuring, testing, navigating and control equipment; watches and clocks                      | 265   | 0.07          | 0.07          | 0.04          | 0.16          | 0.16          |
| 37           | Manufacture of electric motors, generators, transformers, and electricity distribution and control apparatus | 271   | 0.47          | 0.43          | 0.97          | 0.69          | 0.75          |
| 38           | Manufacture of batteries and accumulators  | 272   | 0.13          | 0.01          | 0.00          | 0.02          | 0.01          |
| 39           | Manufacture of wiring and wiring devices   | 273   | 0.36          | 0.05          | 0.06          | 0.11          | 0.08          |
| 40           | Manufacture of electric lighting equipment   | 274   | 0.12          | 0.27          | 0.16          | 0.21          | 0.53          |
| 41           | Manufacture of domestic appliances   | 275   | 0.18          | 0.22          | 0.34          | 0.26          | 0.71          |
| 42           | Manufacture of other electrical equipment  | 279   | 0.16          | 0.08          | 0.11          | 0.15          | 0.26          |
| 43           | Manufacture of general purpose machinery   | 281   | <b>2.76</b>   | 0.48          | 0.51          | 1.01          | 0.77          |
| 44           | Manufacture of special-purpose machinery   | 282   | <b>4.82</b>   | 2.77          | <b>3.79</b>   | <b>3.58</b>   | <b>6.14</b>   |
| 45           | Manufacture of motor vehicles  | 291   | 0.04          | 0.71          | 0.52          | 0.21          | 0.73          |
| 46           | Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers              | 292   | 0.33          | 0.47          | 0.43          | 0.61          | 0.87          |
| 47           | Manufacture of parts and accessories for motor vehicles  | 293   | 2.09          | 2.88          | 1.95          | <b>2.80</b>   | <b>3.76</b>   |
| 48           | Manufacture of railway locomotives and rolling stock   | 302   | 0.22          | 0.22          | 0.27          | 0.16          | 0.21          |
| 49           | Manufacture of transport equipment n.e.c.  | 309   | <b>6.19</b>   | <b>3.20</b>   | <b>5.93</b>   | <b>7.31</b>   | <b>6.87</b>   |
| 50           | Manufacture of furniture   | 310   | 0.22          | 0.04          | 0.02          | 0.06          | 0.04          |
| 51           | Manufacture of jewellery and related articles  | 321   | 0.06          | 0.00          | 0.00          | 0.01          | 0.00          |
| 52           | Manufacture of sports goods  | 323   | 0.57          | 0.32          | 0.39          | 0.49          | 0.50          |
| 53           | Manufacture of medical and dental instruments and supplies   | 325   | 0.07          | 0.05          | 0.08          | 0.27          | 0.14          |
| 54           | Repair of fabricated metal products, machinery, and equipment  | 331   | 0.22          | 0.07          | 0.30          | 0.19          | 0.14          |
| 55           | Publishing of books, periodicals, and other publishing activities  | 581   | 0.09          | 0.20          | 0.18          | 0.14          | 0.16          |
| 56           | Other  | Other | 2.19          | 1.57          | <b>4.04</b>   | 1.57          | 1.91          |
| <b>Total</b> |  |       | <b>100.00</b> | <b>100.00</b> | <b>100.00</b> | <b>100.00</b> | <b>100.00</b> |

Source: Annual Survey of Industries, 2008-2009

**Table 2. KMO and Bartlett's Test**

|  |                    |         |
|--|--------------------|---------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. |                    | 0.561   |
| Bartlett's Test of Sphericity                    | Approx. Chi-Square | 772.245 |
|  | <i>df</i>          | 253.000 |
|  | Sig.               | .000    |

**Table 3. Communalities/Weights**

|   | Initial | Extraction |
|---|---------|------------|
| Personal objective setting                        | 1.000   | .688       |
| Ratings by appraisers                             | 1.000   | .728       |
| Evidence of performance                           | 1.000   | .635       |
| Evidence of project work                          | 1.000   | .652       |
| Comments from mentors or coaches                  | 1.000   | .881       |
| Employee's personal efforts                       | 1.000   | .780       |
| Methods and approach used by the employee         | 1.000   | .791       |
| Support for development                           | 1.000   | .802       |
| Evaluation of appraisal system                    | 1.000   | .603       |
| Critical incidences                               | 1.000   | .643       |
| Careful selection of appraiser                    | 1.000   | .520       |
| Potential assessment criteria                     | 1.000   | .801       |
| Measurement of potential in terms of competencies | 1.000   | .717       |
| Potential for future assignments                  | 1.000   | .780       |
| Promotion based on current performance            | 1.000   | .769       |
| Succession planning                               | 1.000   | .644       |
| Test and exercises for assessment of competencies | 1.000   | .765       |
| Identifying potential employees for promotion     | 1.000   | .672       |
| Assessment centres                                | 1.000   | .836       |
| 360 degree appraisal                              | 1.000   | .828       |
| Behaviourally anchored rating scales              | 1.000   | .672       |
| Management by objectives                          | 1.000   | .637       |
| Components of appraisal systems                   | 1.000   | .731       |

Extraction Method: Principal Component Analysis

Communalities arrived at after the application of factor analysis are shown in the Table 3. Principal component analysis method was used to find out the key factors affecting the performance appraisal systems. Seven factors exhibited an eigen value more than 1, and together, these factors accounted for 72.05% of the total variance (Table 4). The top seven factors revealed after extraction turned out to be comments from mentors or coaches (0.881), assessment centres (0.836), 360-degree appraisal (0.828), development support by managers (0.802), potential assessment criteria (0.801), methods and approach used by the employee (0.791), and the potential of employees for future assignments (0.780).

As discussed, data were collected for 23 variables that were selected after reviewing the relevant literature. In order to remove biasedness among the responses, weighted mean was calculated, wherein the communalities derived from factor analysis were taken as weights. The Table 5 shows the weighted mean and standard deviation for the factors extracted after factor analysis for the top five industries. The figures facilitated inter-industry comparison in light of the extracted factors.

**Table 4. Total Variance of the Factors**

| Component | Initial Eigenvalues |               |              | Extraction Sums of Squared Loadings |               |              |
|-----------|---------------------|---------------|--------------|-------------------------------------|---------------|--------------|
|           | Total               | % of Variance | Cumulative % | Total                               | % of Variance | Cumulative % |
| 1         | 5.896               | 25.637        | 25.637       | 5.896                               | 25.637        | 25.637       |
| 2         | 2.859               | 12.430        | 38.067       | 2.859                               | 12.430        | 38.067       |
| 3         | 2.029               | 8.820         | 46.887       | 2.029                               | 8.820         | 46.887       |
| 4         | 1.777               | 7.724         | 54.611       | 1.777                               | 7.724         | 54.611       |
| 5         | 1.538               | 6.687         | 61.298       | 1.538                               | 6.687         | 61.298       |
| 6         | 1.418               | 6.163         | 67.461       | 1.418                               | 6.163         | 67.461       |
| 7         | 1.058               | 4.598         | 72.059       | 1.058                               | 4.598         | 72.059       |
| 8         | .993                | 4.318         | 76.377       |                                     |               |              |
| 9         | .867                | 3.770         | 80.147       |                                     |               |              |
| 10        | .779                | 3.388         | 83.535       |                                     |               |              |
| 11        | .668                | 2.905         | 86.440       |                                     |               |              |
| 12        | .584                | 2.539         | 88.979       |                                     |               |              |
| 13        | .459                | 1.997         | 90.976       |                                     |               |              |
| 14        | .423                | 1.841         | 92.817       |                                     |               |              |
| 15        | .391                | 1.699         | 94.516       |                                     |               |              |
| 16        | .301                | 1.311         | 95.827       |                                     |               |              |
| 17        | .233                | 1.012         | 96.839       |                                     |               |              |
| 18        | .227                | .988          | 97.827       |                                     |               |              |
| 19        | .188                | .817          | 98.644       |                                     |               |              |
| 20        | .117                | .510          | 99.154       |                                     |               |              |
| 21        | .079                | .342          | 99.496       |                                     |               |              |
| 22        | .078                | .338          | 99.835       |                                     |               |              |
| 23        | .038                | .165          | 100.000      |                                     |               |              |

Extraction Method: Principal Component Analysis

**Table 5. Weightage of Different Factors in Selected Industries**

| Variables                                     | 106            |            | 131            |            | 241            |            | 309            |            | 143            |            | $\bar{X}_w$ | $\sigma$ |
|---|----------------|------------|----------------|------------|----------------|------------|----------------|------------|----------------|------------|-------------|----------|
|   | $\bar{X}_{w1}$ | $\sigma_1$ | $\bar{X}_{w2}$ | $\sigma_2$ | $\bar{X}_{w3}$ | $\sigma_3$ | $\bar{X}_{w4}$ | $\sigma_4$ | $\bar{X}_{w5}$ | $\sigma_5$ |             |          |
| Comments from Mentors or Coaches              | 6.10           | 0.68       | 5.55           | 0.73       | 5.85           | 0.54       | 6.10           | 3.29       | 5.30           | 0.39       | <b>5.78</b> | 1.13     |
| Assessment Centres                            | 5.00           | 0.94       | 4.20           | 2.20       | 5.65           | 0.69       | 6.10           | 3.24       | 4.40           | 1.46       | <b>5.07</b> | 1.70     |
| 360 Degree Appraisal                          | 5.60           | 0.93       | 4.30           | 2.41       | 6.45           | 0.60       | 6.40           | 3.43       | 6.50           | 0.60       | <b>5.85</b> | 1.59     |
| Development Support by Managers               | 5.50           | 0.69       | 5.15           | 0.43       | 4.55           | 0.81       | 5.20           | 3.06       | 4.60           | 0.76       | <b>5.00</b> | 1.15     |
| Potential Assessment Criteria                 | 5.15           | 1.10       | 5.35           | 0.68       | 4.40           | 0.83       | 4.60           | 2.52       | 4.90           | 1.27       | <b>4.88</b> | 1.28     |
| Comments on the Methods used by the Employee  | 5.60           | 0.27       | 5.25           | 0.72       | 5.45           | 0.73       | 5.60           | 3.02       | 5.50           | 0.67       | <b>5.48</b> | 1.08     |
| Potential of Employees for Future Assignments | 5.60           | 0.74       | 5.50           | 0.74       | 5.15           | 0.50       | 6.00           | 3.28       | 5.90           | 0.60       | <b>5.63</b> | 1.17     |
| <b>(X)</b>                                    | <b>5.51</b>    |            | <b>5.04</b>    |            | <b>5.36</b>    |            | <b>5.71</b>    |            | <b>5.30</b>    |            |             |          |



**Table 6. Kruskal-Wallis Test**

| Ranks                          |          |    |           |
|--------------------------------|----------|----|-----------|
|                                | Comments | N  | Mean Rank |
| pairedvar                      | 4        | 1  | 78.00     |
|                                | 5        | 24 | 44.88     |
|                                | 6        | 38 | 39.24     |
|                                | 7        | 16 | 32.12     |
|                                | Total    | 79 |           |
| Test Statistics <sup>a,b</sup> |          |    |           |
|                                |          |    | pairedvar |
| Chi-Square                     |          |    | 5.751     |
| df                             |          |    | 3         |
| Asymp. Sig.                    |          |    | .124      |
| a. Kruskal Wallis Test         |          |    |           |
| b. Grouping Variable: comments |          |    |           |

It is evident from the Table 5 that 360 degree performance appraisal was considered as a significant technique followed by comments from mentors and coaches, and potential of employees for future assignments. However, potential assessment criteria and development support by managers seem to be less significant in all these industries. Amongst industries, manufacture of transport equipment n.e.c. (309) is the only industry where due importance was given to all the top factors influencing the performance appraisal systems; whereas spinning, weaving, and finishing of textiles (131) is the industry where the performance appraisal system was not implemented effectively. The respondents of both industries - manufacture of grain mill products, starches, and starch products (106) and spinning, weaving, and finishing of textiles (131) had a positive attitude for comments from mentors or coaches, but did not consider assessment centres as significant means of performance appraisal. Similarly, manufacture of basic iron and steel (241) and manufacture of transport equipment n.e.c.(309) showed a positive attitude towards the 360 degree performance appraisal system, but found potential assessment criteria to be less significant. As far as manufacture of knitted and crocheted apparel (143) is concerned, the respondents had a favourable attitude towards 360 degree performance appraisal systems, but found assessment centres to be less significant.

In order to test if all the selected variables were equally important, the hypothesis framed previously were tested in this section. The Table 6 shows the values of Kruskal-Wallis test where the  $p$  - value is found to be greater than .05. The null hypothesis is hence accepted, which means that the variables affecting the performance appraisal systems are equally important.

The discussion clearly indicates that the most important variables affecting performance appraisal systems are comments from mentors or coaches, assessment centres, 360-degree appraisal, development support by managers, potential assessment criteria, comments on the methods and approach used by the employee, and the potential of employees for future assignments. Furthermore, 360-degree appraisal was found to be a preferred method of conducting performance appraisals, whereas criteria pertaining to potential assessment was found to be less significant.

## Conclusion and Managerial Implications

Economic growth is accompanied by the transformation of a primitively agrarian economy to an industrialized one. Scholars have agreed that reaching higher income levels without industrialization is at least not sustainable,



if not impossible. Also, human resources are acknowledged as the most vital component for industrial growth and development. To develop human resources, HRD interventions that is, performance appraisal, training and development, career planning, coaching, and so forth are implemented.

In this study, performance appraisal systems being practiced in different manufacturing industries of Punjab were assessed followed by identification of different variables affecting the performance appraisal systems. Comments from mentors or coaches, assessment centres, 360-degree appraisal, development support by managers, potential assessment criteria, comments on the methods and approach used by the employee, and the potential of employees for future assignments are the dominant variables which affect the outcomes of performance appraisal. These variables accounted for nearly three fourth of the variance, which clearly indicates that the remaining variables had a lower impact on performance appraisal. These variables were also found to be equally important in contributing to the effectiveness of performance appraisal. Moreover, potential appraisal should be made an integral part of performance management, and the criteria for the same should be made clear.

It is evident from the significance attached to different factors in selected industries that the managers should give due importance to comments from coaches and mentors while appraising the performance of an employee. Not only this, 360 degree appraisal should be a preferred technique of performance appraisal as it facilitates the feedback from peers, superiors, and subordinates. Furthermore, a supportive environment extended by the managers for the development of employees goes a long way in improving their performance. While appraising the employees, managers should give due consideration to the methods adopted by the employee along with his/her potential to handle future assignments. This facilitates a manager in delegation and succession planning. Managers in organizations should adopt modern techniques of performance appraisal to ensure that the outcomes are effective.

## Limitations of the Study and Scope for Further Research

To realize the limitation of a research is indeed a learning experience. The present study was conducted with all sincerity and diligence. However, constraints of time, resources, and incompleteness of certain items in the questionnaire may have weakened the authenticity of data. Furthermore, the study was confined to the manufacturing sector of Punjab and could have included other sectors. The generalization emerging from this study is more indicative than conclusive and is limited to a particular group of employees who have been included in the present study.

The present study has significant relevance for understanding performance appraisal systems and the factors influencing them. The study can be enhanced to get a broader picture if data is collected from other sectors of Punjab. Performance appraisal systems being implemented in the manufacturing sector of Punjab can further be compared with other primary HRD practices like training and development, career development, and so forth. Not only this, comparison of performance appraisal systems in private and public sectors can lead to identification of better ways of implementation of appraisal systems.

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### Annexure 1

| Units Selected in Each Dominant Industry for the Purpose of the Present Study |  |                                      |  |   |
|---|--|--------------------------------------|--|---|
| Industry  | Units                                      |                                      |  |   |
| Codes   | 1  | 2                                    | 3                                      | 4                                       |
| 106   | Kitty Industries Pvt.Ltd, Ludhiana         | Mahavir Rice Mills,Bhatinda          | Bonn Nutrients Pvt.Ltd, Ludhiana       | Singla Rice Mills,Samana                |
| 131   | Sainik Textiles Mills Pvt.Ltd.,<br>Sangrur | Winsome Yarns Ltd,<br>Dera Bassi     |  |   |
| 241   | Akal Pipes Private Limited,<br>Sangrur     | Vikram Industries, Mohali            | Prime Alloys,Mandi Gobindgarh          | Genuine Export<br>Corporation, Ludhiana |
| 309   | Speedways Tyres Ltd., Jalandhar            | Hero Ecotech Ltd, Ludhiana           | S K Bikes, Ludhiana                    |   |
| 143   | Winsome Knit Wear, Mohali                  | Superfine Kintters Ltd.,<br>Ludhiana | Sriyansh Enterprises Ltd.,<br>Ludhiana |   |

## Annexure 2

| Expanded Name of the Variables used as Codes |   |  |
|--|---|--|
|  | Code  | Variables  |
| 1  | Personal Objective Setting                        | Quality of personal objective setting for individual employees in your organization is excellent.  |
| 2  | Ratings by Appraisers                             | Ratings by appraisers are sometimes seen as based on subjective judgments like "not upto the mark".  |
| 3  | Evidence of Performance                           | Evidence of performance is gathered throughout the year.   |
| 4  | Evidence of Project Work                          | Evidence from project work (extra assignments) are included in performance appraisal.  |
| 5  | Comments from Mentors or Coaches                  | Comments from mentors or coaches are included in performance appraisal.  |
| 6  | Employee's Personal Efforts                       | An employee's personal efforts to become more proficient in his/her assignment and to prepare for more responsibility are considered.  |
| 7  | Methods and Approach used by the Employee         | Comments on the methods and approach used by the employee in performing the job are evaluated.   |
| 8  | Support for Development                           | Low performance is highlighted, but development support is also defined.   |
| 9  | Evaluation of the Appraisal System                | The appraisal system is maintained by monitoring its operation through periodic evaluation.  |
| 10   | Critical Incidences                               | Critical incidences during the performance of job are recorded.  |
| 11   | Careful Selection of Appraiser                    | Appraisers are selected carefully by using a representative sample of people most critical to the ratee and who had a greater opportunity to observe his or her performance.         |
| 12   | Potential Assessment Criteria                     | Potential assessment criteria is mostly based on an employee's process skills.   |
| 13   | Measurement of Potential in Terms of Competencies | Potential of the employees is measured in terms of the competencies required to achieve the target level of performance in a particular job or at a particular level in the company. |
| 14   | Potential for Future Assignments                  | The potential of employees for future assignments is considered.   |
| 15   | Promotion Based on Current Performance            | The promotions are given on the basis of current performance and consideration is also given to the potential of the employee.   |
| 16   | Succession Planning                               | The Management believes in developing a suitable employee base for succession planning.  |
| 17   | Test, Exercises for Assessment of Competencies    | Tests & exercises and assignments are given to the employees to assess their competencies and on the job behaviour and potential to take higher responsibilities.                    |
| 18   | Identifying Potential Employees for Promotion     | Potential assessment identifies training needs, provides guidance on possible directions in which an individual's career might go, and indicates who has potential for promotion.    |
| 19   | Assessment Centres                                | Assessment centres provide a good opportunity for indicating the extent to which candidates match the culture of the organization.   |
| 20   | 360 Degree Appraisal                              | 360-degree appraisal is effective in identifying and measuring interpersonal skills, customer satisfaction, and team-building skills.  |
| 21   | Behaviourally Anchored Rating Scales              | Behaviourally Anchored Rating Scales (BARS) method is a relatively new technique which combines the graphic rating scale and critical incidents method.                              |
| 22   | Management by Objectives                          | Management By Objectives (MBO) is to create empowered employees who have clarity of roles and responsibilities expected from them and understand their objectives.                   |
| 23   | Components of Appraisal Systems                   | Appraisal systems should include self-analysis, employee input into evaluation, feedback, and goal setting by workers.   |