CHAPTER – 4

Presentation and Analysis of
Data and Interpretation of
Results

4.1 Presentation of Raw scores and Summary of 2×2×2 ANOVA
4.2 To study the effect of emotional maturity on teaching effectiveness of school teachers
4.3 To study the effect of hardiness on teaching effectiveness of school teachers
4.4 To study the effect of job satisfaction on teaching effectiveness of school teachers
4.5 To study the interactional effects of independent variables on school teachers
4.6 To study the combined and individual effect of emotional maturity, hardiness and job satisfaction on teaching effectiveness of school teachers.
4.7 To study the effect of demographic variables (gender, marital status and teaching experience) on teaching effectiveness of school teachers
4.8 To study the combined effect of emotional maturity, hardiness and job satisfaction on teaching effectiveness of school teachers with respect to demographic variables
CHAPTER - 4

PRESENTATION AND ANALYSIS OF DATA AND INTERPRETATION OF RESULTS

Once the data have been collected in a research study the next step usually involves the analysis of those data. An analysis means the categorising, ordering, manipulating and summarizing of data to obtain answers to research questions. The purpose of analysis is to reduce data to intelligible and interpretable form so that the relations of research can be studied and tested by extracting as much information as possible that is pertinent to the subjects under consideration. Data analyses provide: 1) Descriptive statistics that help in computing measures of central tendency and dispersion. 2) Inferential statistics used to make inferences concerning the unknown aspect of a population from a sample of that population.

As mentioned in the preceding chapter, the present investigation was undertaken to study the impact of Emotional Maturity, Hardiness, and Job Satisfaction on Teaching Effectiveness of School Teachers. In order to achieve this objective a $2 \times 2 \times 2$ factorial design of research was employed in the present study. Thus there were three independent variables i.e. Emotional Maturity, Hardiness and Job Satisfaction each varying in two ways. The two values of first personality variable i.e. emotional maturity were (a) emotionally mature and (b) emotionally immature; similarly the two values of second personality variable i.e. hardiness were (a) hardy and (b) non hardy. The third variable was also varied in two ways as (a) job satisfied and (b) job dissatisfied. Thus there were eight groups of school teachers namely, Emotionally mature, Hardy and Job satisfied teachers; Emotionally mature, Hardy and Job dissatisfied teachers; Emotionally mature, Non hardy and Job satisfied teachers; Emotionally mature, Non hardy and Job dissatisfied teachers; Emotionally immature, Hardy and Job satisfied teachers; Emotionally immature, Hardy and Job dissatisfied teachers; Emotionally immature, Non hardy and Job satisfied teachers; Emotionally immature, Non hardy and Job dissatisfied teachers. As dictated by the design of the study, each group of subjects was tested for teaching effectiveness. Since the main objective of the present study was to determine the impact of emotional maturity, hardiness and job satisfaction, three way Analysis of Variance
(ANOVA) was used to draw necessary inferences. Thus F-ratios were calculated for the variation of each independent variable and also for any possible interaction between two or more than two variables. Further, for computing the extent of variance, multiple regression analysis was carried out and for determining the effect of demographic variables suitable statistical techniques were applied. Before starting the data analyses the data were subjected to data screening for finding the incorrect values, missing values and outliers entered into the spreadsheet that can render our data non normal and then preliminary analysis for testing the assumptions was conducted which provide the desirable results and fulfil the required assumptions for the analysis techniques. For computation of needed statistics and application of appropriate statistical tests most of the data were analysed on Statistical Package for Social Sciences (SPSS, version. 16). A part of the data was manually treated.

The present chapter gives data analyses and interpretation of results as per the following sections:

4.1). Presentation of raw scores and summary of three way ANOVA.

4.2). To study the effect of emotional maturity on teaching effectiveness of school teachers.

4.3). To study the impact of hardiness on teaching effectiveness of school teachers.

4.4). To study the effect of job satisfaction on teaching effectiveness of school teachers.

4.5). To study the interactional effects of independent variables on teaching effectiveness of school teachers.

4.6). To study the combined and individual effects of selected independent variables viz. emotional maturity, hardiness and job satisfaction on the teaching effectiveness of school teachers.

4.7). To study the effect of some demographic variables (gender, marital status, and teaching experience) on teaching effectiveness of school teachers.

4.8). To study the combined effect of emotional maturity, hardiness and job satisfaction on teaching effectiveness of school teachers with respect to demographic variables (gender, marital status and teaching experience).
4.1) Presentation of raw scores and summary of 2×2×2 ANOVA

The raw scores obtained by eight groups of teachers on Teacher Effectiveness Scale are given in Table 4.1.1 and the summary of three way Analysis of Variance showing main effects and interaction effects is presented in Table 4.1.2.

Table 4.1.1: Raw teaching effectiveness scores of eight groups of teachers.

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Emotionally Mature</th>
<th>Emotionally Immature</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hardy</td>
<td>Non hardy</td>
</tr>
<tr>
<td>1.</td>
<td>298</td>
<td>290</td>
</tr>
<tr>
<td>2.</td>
<td>287</td>
<td>265</td>
</tr>
<tr>
<td>3.</td>
<td>294</td>
<td>306</td>
</tr>
<tr>
<td>4.</td>
<td>283</td>
<td>308</td>
</tr>
<tr>
<td>5.</td>
<td>319</td>
<td>282</td>
</tr>
<tr>
<td>6.</td>
<td>306</td>
<td>300</td>
</tr>
<tr>
<td>7.</td>
<td>330</td>
<td>340</td>
</tr>
<tr>
<td>8.</td>
<td>332</td>
<td>272</td>
</tr>
<tr>
<td>9.</td>
<td>319</td>
<td>280</td>
</tr>
<tr>
<td>10.</td>
<td>302</td>
<td>268</td>
</tr>
<tr>
<td>11.</td>
<td>333</td>
<td>286</td>
</tr>
<tr>
<td>12.</td>
<td>336</td>
<td>292</td>
</tr>
<tr>
<td>13.</td>
<td>340</td>
<td>214</td>
</tr>
<tr>
<td>14.</td>
<td>317</td>
<td>280</td>
</tr>
<tr>
<td>15.</td>
<td>341</td>
<td>270</td>
</tr>
<tr>
<td>16.</td>
<td>324</td>
<td>265</td>
</tr>
<tr>
<td>17.</td>
<td>341</td>
<td>318</td>
</tr>
<tr>
<td>18.</td>
<td>337</td>
<td>243</td>
</tr>
<tr>
<td>19.</td>
<td>332</td>
<td>284</td>
</tr>
<tr>
<td>20.</td>
<td>268</td>
<td>275</td>
</tr>
<tr>
<td>21.</td>
<td>314</td>
<td>317</td>
</tr>
<tr>
<td>22.</td>
<td>263</td>
<td>281</td>
</tr>
<tr>
<td>23.</td>
<td>341</td>
<td>311</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>24.</td>
<td>334</td>
<td>290</td>
</tr>
<tr>
<td>25.</td>
<td>336</td>
<td>254</td>
</tr>
<tr>
<td>26.</td>
<td>310</td>
<td>261</td>
</tr>
<tr>
<td>27.</td>
<td>327</td>
<td>296</td>
</tr>
<tr>
<td>28.</td>
<td>267</td>
<td>291</td>
</tr>
<tr>
<td>29.</td>
<td>210</td>
<td>292</td>
</tr>
<tr>
<td>30.</td>
<td>333</td>
<td>301</td>
</tr>
<tr>
<td>31.</td>
<td>316</td>
<td>278</td>
</tr>
<tr>
<td>32.</td>
<td>279</td>
<td>290</td>
</tr>
<tr>
<td>33.</td>
<td>334</td>
<td>228</td>
</tr>
<tr>
<td>34.</td>
<td>305</td>
<td>311</td>
</tr>
<tr>
<td>35.</td>
<td>297</td>
<td>284</td>
</tr>
<tr>
<td>36.</td>
<td>341</td>
<td>325</td>
</tr>
<tr>
<td>37.</td>
<td>297</td>
<td>292</td>
</tr>
<tr>
<td>38.</td>
<td>301</td>
<td>296</td>
</tr>
<tr>
<td>39.</td>
<td>291</td>
<td>261</td>
</tr>
<tr>
<td>40.</td>
<td>270</td>
<td>297</td>
</tr>
<tr>
<td>41.</td>
<td>305</td>
<td>254</td>
</tr>
<tr>
<td>42.</td>
<td>281</td>
<td>289</td>
</tr>
<tr>
<td>43.</td>
<td>317</td>
<td>324</td>
</tr>
<tr>
<td>44.</td>
<td>325</td>
<td>340</td>
</tr>
<tr>
<td>45.</td>
<td>330</td>
<td>290</td>
</tr>
<tr>
<td>46.</td>
<td>289</td>
<td>292</td>
</tr>
<tr>
<td>47.</td>
<td>317</td>
<td>278</td>
</tr>
<tr>
<td>48.</td>
<td>308</td>
<td>289</td>
</tr>
<tr>
<td>49.</td>
<td>334</td>
<td>250</td>
</tr>
<tr>
<td>50.</td>
<td>330</td>
<td>297</td>
</tr>
<tr>
<td>51.</td>
<td>332</td>
<td>274</td>
</tr>
<tr>
<td>52.</td>
<td>312</td>
<td>284</td>
</tr>
<tr>
<td>53.</td>
<td>309</td>
<td>291</td>
</tr>
<tr>
<td>54.</td>
<td>321</td>
<td>332</td>
</tr>
<tr>
<td>55.</td>
<td>293</td>
<td>270</td>
</tr>
<tr>
<td>56.</td>
<td>280</td>
<td>279</td>
</tr>
<tr>
<td>57.</td>
<td>299</td>
<td>294</td>
</tr>
</tbody>
</table>
When these raw scores are subjected to 2×2×2 factorial analysis of variance, they provide the results as presented in Table 4.1.2 showing the main effects and interactional effects of the three independent variables i.e. emotional maturity, hardiness and job satisfaction on teaching effectiveness of school teachers.
Table 4.1.2: Summary of 2×2×2 ANOVA.

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>Sum of squares (SS)</th>
<th>df</th>
<th>Mean square (MS)</th>
<th>F- ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional maturity (EM)</td>
<td>32134.802</td>
<td>1</td>
<td>32134.802</td>
<td>64.968**</td>
</tr>
<tr>
<td>Hardiness (H)</td>
<td>5747.415</td>
<td>1</td>
<td>5747.415</td>
<td>11.620**</td>
</tr>
<tr>
<td>Job satisfaction(JS)</td>
<td>50215.202</td>
<td>1</td>
<td>50215.202</td>
<td>101.522**</td>
</tr>
<tr>
<td>EM × H</td>
<td>1584.375</td>
<td>1</td>
<td>1584.375</td>
<td>3.203</td>
</tr>
<tr>
<td>EM × JS</td>
<td>219.615</td>
<td>1</td>
<td>219.615</td>
<td>0.444</td>
</tr>
<tr>
<td>H × JS</td>
<td>214.802</td>
<td>1</td>
<td>214.802</td>
<td>0.434</td>
</tr>
<tr>
<td>EM × H × JS</td>
<td>5884.402</td>
<td>1</td>
<td>5884.402</td>
<td>11.879**</td>
</tr>
<tr>
<td>Error</td>
<td>292816.453</td>
<td>592</td>
<td>494.622</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>388817.065</td>
<td>599</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** Significant at 0.01 level, p < 0.01

4.2) To study the effect of emotional maturity on teaching effectiveness of school teachers

As we know that emotional maturity in the present study has two levels of variation i.e. (a) emotionally mature, and (b) emotionally immature. In order to investigate the effect of emotional maturity on teaching effectiveness of school teachers we take into consideration the main effect of emotional maturity from Table 4.1.2. The F ratio for emotional maturity variation i.e. F (1, 592) = 64.968 (p < 0.01) [ref, Table 4.1.2] is significant at 0.01 level indicating that emotional maturity and emotional immaturity have differential effect on teaching effectiveness of school teachers. To better understand this differential effect, we compare the means of the mean values of emotionally mature and emotionally immature teachers as presented in Table 4.2
Table 4.2: Mean of means and (SDs) of emotionally mature and emotionally immature teachers.

<table>
<thead>
<tr>
<th>Groups</th>
<th>Hardy</th>
<th>Non hardy</th>
<th>Mean of the means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Job satisfied</td>
<td>Job dissatisfied</td>
<td>Job satisfied</td>
</tr>
<tr>
<td>Emotionally Mature</td>
<td>310.44 (25.18)</td>
<td>285.87 (22.88)</td>
<td>295.93 (30.56)</td>
</tr>
<tr>
<td>Emotionally Immature</td>
<td>285.08 (13.42)</td>
<td>275.45 (25.71)</td>
<td>289.60 (14.47)</td>
</tr>
</tbody>
</table>

Disregarding other two variables i.e. hardiness and job satisfaction, we find in Table 4.2 that mean of the means for emotionally mature teachers’ group is **293.43** [ (310.44 + 285.87 + 295.93 + 281.49) / 4] with **SD = 27.58** and mean of the means for emotionally immature group of teachers is **278.79** [ (285.08 + 275.45 + 289.60 + 265.05) / 4] with **SD = 20.80**. Since the mean of the means for emotionally mature group of teachers is higher than the mean of means for the emotionally immature group of teachers (293.432>278.792), as visualised graphically in Figure 4.1; it can safely be concluded that the variation in emotional maturity has differential effect on teaching effectiveness of school teachers. More specifically the results make it crystal clear that emotionally mature teachers are more effective in teaching than emotionally immature teachers.
4.3) To study the impact of hardiness on teaching effectiveness of school teachers

Hardiness in the present study is varied in two ways as (a) hardy, and (b) non hardy. The F- ratio for hardiness variation as given in Table 4.1.2 is statistically significant at .01 level i.e. $F(1, 592) = 11.620, p < .01$ indicating that hardiness variation also has a significant differential effect on teaching effectiveness of school teachers. To clarify the differential effect of hardiness on teaching effectiveness, mean of the mean values of hardy and non hardy teachers are compared as presented in Table 4.3.

**Table 4.3: Mean of means and (SDs) of hardy and non hardy teachers.**

<table>
<thead>
<tr>
<th>Groups</th>
<th>Emotionally Mature</th>
<th>Emotionally Immature</th>
<th>Mean of the means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Job satisfied</td>
<td>Job Dissatisfied</td>
<td>Job Satisfied</td>
</tr>
<tr>
<td>Hardy</td>
<td>310.44 (25.18)</td>
<td>285.87 (22.88)</td>
<td>285.08 (13.42)</td>
</tr>
<tr>
<td>Non hardy</td>
<td>295.93 (30.56)</td>
<td>281.49 (21.88)</td>
<td>289.60 (14.47)</td>
</tr>
</tbody>
</table>
Ignoring emotional maturity and job satisfaction it is found in Table 4.3 that the mean of the means for hardy teachers is \( \bar{X} = 289.21 \) \( \left( \frac{310.44 + 285.87 + 285.08 + 275.45}{4} \right) \) with \( SD = 25.73 \) which is greater enough than the mean of the means for non hardy teachers i.e. \( \bar{X} = 283.02 \) \( \left( \frac{295.93 + 281.49 + 289.60 + 265.05}{4} \right) \) with \( SD = 24.87 \). It is therefore concluded that hardiness variation has a significant impact on teaching effectiveness of school teachers suggesting that hardy teachers score higher than non hardy teachers on teaching effectiveness scale. The significant mean differences can be observed clearly in Figure 4.2.

![Figure 4.2: Comparison of mean teaching effectiveness scores of hardy and non hardy teachers.](image)

4.4) To study the effect of job satisfaction on teaching effectiveness of school teachers

Third independent variable i.e. job satisfaction is varied as (a) job satisfied, and (b) job dissatisfied. The F ratio for job satisfaction variation i.e. \( F (1, 592) = 101.522, (p<0.01) \) as shown in Table 4.1.2 is significant at 0.01 level. The result reveals that job satisfied and job dissatisfied teachers differ in their degree of teaching effectiveness. To determine which group is better, mean value comparisons of means of job satisfied and job dissatisfied teachers is done as shown in Table 4.4.
Table 4.4: Mean of means and (SDs) of job satisfied and job dissatisfied teachers.

<table>
<thead>
<tr>
<th>Groups</th>
<th>Emotionally Mature</th>
<th></th>
<th>Emotionally Immature</th>
<th></th>
<th>Mean of the means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hardy</td>
<td>Non hardy</td>
<td>Hardy</td>
<td>Non hardy</td>
<td></td>
</tr>
<tr>
<td>Job Satisfied</td>
<td>310.44 (25.18)</td>
<td>295.93 (30.56)</td>
<td>285.08 (22.88)</td>
<td>289.60 (14.47)</td>
<td>295.26 (24.01)</td>
</tr>
<tr>
<td>Job dissatisfied</td>
<td>285.87 (13.42)</td>
<td>281.49 (21.88)</td>
<td>275.45 (25.71)</td>
<td>265.05 (18.34)</td>
<td>276.96 (23.58)</td>
</tr>
</tbody>
</table>

Disregarding emotional maturity and hardiness it is observed in Table 4.4 that the mean of the means for job satisfied teachers’ group is \( 295.26 \) \([(310.44+295.93+285.08+289.60)/4 \)] with \( SD = 24.01 \) and the mean of the means for job dissatisfied teachers’ group is \( 276.96 \) \([(285.87+281.49+275.45+265.05)/4 \)] with \( SD = 23.58 \). The difference between the means is significant as observed graphically in Figure 4.3 indicating that job satisfaction and job dissatisfaction have differential effect on teaching effectiveness of school teachers. More specifically we can say that job satisfied school teachers are more effective in teaching than job dissatisfied teachers.

![Figure 4.3: Comparison of mean teaching effectiveness scores of job satisfied and job dissatisfied teachers.](image)
4.5) To study the interactional effects of independent variables on teaching effectiveness of school teachers

Three way analysis of variance yields 3 two-way interactional effects and 1 three-way interactional effect which are discussed in the following subsections:

4.5.1) Emotional maturity × Hardiness Interaction (EM × H)

The F ratio for interaction between emotional maturity and hardiness as shown in Table 4.1.2 i.e. $F (1, 592) = 3.203, p > 0.05$ is slightly insignificant statistically. To be significant at .05 level, an F-ratio of 3.85 is required which is very close to the calculated F-ratio of 3.20. The result weakly suggests that there is no interactional effect of emotional maturity and hardiness on teaching effectiveness of school teachers. To better understand this, graphical representation is taken into consideration as depicted in Figure 4.4. In this Figure the two levels of emotional maturity are shown on the horizontal axis. The data points represent means of the four conditions: Point (1) is the mean for the group with emotionally mature–hardy teachers; Point (2) is the mean of the group with emotionally mature–non hardy teachers; Point (3) is the mean of the group with emotionally immature–hardy teachers; and Point (4) is the mean of emotionally immature–non hardy teachers’ group (see Table 4.5.1). The line that connect point (1) and (3) represents mean teaching effectiveness scores of hardy teachers half of which were emotionally mature and the other half of which were emotionally immature. The line that connects point (2) and (4) represents the mean teaching effectiveness scores of non hardy teachers half of which were emotionally mature and the remaining half were emotionally immature. Though F-ratio for interaction between emotional maturity and hardiness is statistically insignificant, it is observed in the Figure that the lines are not parallel as expected for no interactional effect, rather suggesting an ordinal interaction between emotional maturity and hardiness. This can be explained on account of slightly insignificant F-ratio. Further similar observations are reported from table 4.5.1.
Table 4.5.1: Mean differences of teaching effectiveness scores for emotional maturity × hardiness interaction.

<table>
<thead>
<tr>
<th>Groups</th>
<th>Hardy</th>
<th>Non hardy</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotionally Mature</td>
<td>298.15</td>
<td>288.71</td>
<td>9.44</td>
</tr>
<tr>
<td>Emotionally Immature</td>
<td>280.27</td>
<td>277.33</td>
<td>2.94</td>
</tr>
<tr>
<td>Difference</td>
<td>17.88</td>
<td>11.38</td>
<td></td>
</tr>
</tbody>
</table>

On the perusal of Table 4.5.1, it is observed that the difference in mean teaching effectiveness scores between emotionally mature-hardy and emotionally immature-hardy group of teachers is 17.88 which is greater enough than the difference in mean teaching effectiveness score of emotionally mature-non hardy and emotionally immature-non hardy group of teachers i.e. 11.38.

Further when we compare the differences between means in the other direction, we find that the mean teaching effectiveness scores of emotionally mature-hardy and emotionally mature-non hardy teachers’ group differ by 9.44 units (ref. Table 4.5.1) which is greater enough than the difference between emotionally immature-hardy and emotionally immature-non hardy groups of teachers i.e. 2.94 to make the interactional effect significant. Though graphical representation from Figure 4.4 and inference of Table 4.5.1 suggests the possibility of an interaction between emotional maturity and hardiness but this interaction is not significant enough statistically to produce a significant F-ratio. It is therefore inferred that there is no interactional effect of emotional maturity and hardiness on teaching effectiveness of school teachers.
Figure 4.4: Emotional maturity × Hardiness Interaction.
4.5.2) Emotional Maturity × Job Satisfaction Interaction (EM × JS)

The F ratio for interaction between emotional maturity and job satisfaction i.e. $F (1, 592) = 0.444$ [ref Table 4.1.2] is statistically insignificant. Result shows that there is no interactional effect of emotional maturity and job satisfaction on teaching effectiveness of school teachers. To better understand this, we consider the line graph for this interactional effect as depicted in Figure 4.5. In the figure the two levels of emotional maturity are shown on horizontal axis (i.e. emotionally mature and emotionally immature). The data points represent means of four conditions; Point (1) is the mean of emotionally mature–job satisfied teachers; Point (2) is the mean of emotionally mature–job dissatisfied teachers; point (3) is the mean of emotionally immature–job satisfied teachers; and Point (4) is the mean of emotionally immature–job dissatisfied teachers. The line that connects point (1) and (3) represent the mean teaching effectiveness scores of job satisfied teachers half of which were emotionally mature and the other half were emotionally immature and the line connecting point (2) and (4) represent the mean teaching effectiveness scores of job dissatisfied teachers half of which were emotionally mature and the other half were emotionally immature. On observing, we found that the two lines are parallel to each other indicating no interaction between emotional maturity and job satisfaction. Since the lines do not cross each other, it is inferred that there is no interaction between emotional maturity and job satisfaction which supports our finding. The same conclusion can be drawn from Table 4.5.2.

Table 4.5.2: Mean teaching effectiveness scores for emotional maturity × job satisfaction interaction.

<table>
<thead>
<tr>
<th>Groups</th>
<th>Job satisfied</th>
<th>Job dissatisfied</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotionally Mature</td>
<td>303.19</td>
<td>283.68</td>
<td>19.51</td>
</tr>
<tr>
<td>Emotionally Immature</td>
<td>287.34</td>
<td>270.25</td>
<td>17.09</td>
</tr>
<tr>
<td>Difference</td>
<td>15.85</td>
<td>13.43</td>
<td></td>
</tr>
</tbody>
</table>
In Table 4.5.2 we find that the difference in mean teaching effectiveness scores between emotionally mature-job satisfied and emotionally immature-job satisfied group of teachers is 15.85 which is not greater enough than the difference in mean teaching effectiveness scores between emotionally mature-job dissatisfied and emotionally immature-job dissatisfied teachers (i.e. 13.43) to make the interactional effect significant. The same conclusion can be drawn when differences in the other direction are compared, i.e. the difference in the mean teaching effectiveness scores of emotionally mature-job satisfied and emotionally mature-job dissatisfied teachers (i.e. 19.51) is more or less similar to the difference in mean teaching effectiveness scores of emotionally immature-job satisfied teachers and emotionally immature-job dissatisfied teachers (i.e. 17.09). These results clearly support the non existence of an interactional effect of emotional maturity and job satisfaction on teaching effectiveness of school teachers as discerned by insignificant F-ratio.
Figure 4.5: Emotional Maturity × Job Satisfaction Interaction.
4.5.3) Hardiness × Job Satisfaction (H × JS)

The F-ratio for third 2 way interaction i.e. hardiness × job satisfaction as observed from Table 4.1.2 i.e. $F (1, 592) = 0.434, (p > 0.05)$ is statistically insignificant. Result shows that there is no interactional effect of hardiness and job satisfaction on teaching effectiveness of school teachers. Further the result is well supported from Figure 4.6. In this figure the two values of hardiness i.e. hardy and non hardy are shown on the horizontal axis. The data points represent means of four conditions; Point (1) is the mean for hardy–job satisfied teachers; Point (2) is the mean of hardy–job dissatisfied group of teachers; Point (3) is the mean for non hardy–job satisfied teachers and Point (4) is the mean value of non hardy–job dissatisfied group of teachers. The line that connects point (1) and (3) represent mean teaching effectiveness score of job satisfied teachers, half of which were hardy and the remaining half were non hardy. The line that connects point (2) and (4) represents the mean teaching effectiveness scores of job dissatisfied teachers half of which were hardy and the others were non hardy. Since these two lines are parallel to each other, therefore it can be concluded that there is no interactional effect of hardiness and job satisfaction on teaching effectiveness of school teachers. The same conclusion can be drawn from Table 4.5.3.

Table 4.5.3: Mean differences of teaching effectiveness scores for hardiness × job satisfaction interaction.

<table>
<thead>
<tr>
<th>Groups</th>
<th>Job satisfied</th>
<th>Job dissatisfied</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardy</td>
<td>297.76</td>
<td>280.66</td>
<td>17.1</td>
</tr>
<tr>
<td>Non hardy</td>
<td>292.77</td>
<td>273.27</td>
<td>19.5</td>
</tr>
<tr>
<td>Difference</td>
<td>4.99</td>
<td>7.39</td>
<td></td>
</tr>
</tbody>
</table>

As observed in Table 4.5.3, the difference in the mean teaching effectiveness scores between hardy-job satisfied and non hardy-job satisfied groups of teachers is 4.99 which is only 2.4 units lesser than the difference in the mean teaching effectiveness scores of hardy-job dissatisfied and non hardy-job dissatisfied teachers’ group i.e. 7.39.
Figure 4.6: Hardiness × Job satisfaction Interaction.
Similarly when we compare the differences of mean in the other direction we found that mean teaching effectiveness scores of hardy-job satisfied and hardy-job dissatisfied teachers’ group differ by 17.1 units which is more or less similar to the difference between means of non hardy-job satisfied and non hardy-job dissatisfied groups of teachers i.e. 19.5. On the basis of observation that the differences vary in the same manner in both the directions, it can safely be concluded that there is no interactional effect of hardiness and job satisfaction on teaching effectiveness of school teachers as obtained by F- ratio.

**4.5.4) Emotional Maturity × Hardiness × Job Satisfaction interaction (EM×H×JS)**

The only three way interaction i.e. EM × H × JS is found to be statistically significant with \( F (1, 592) = 11.879 \) (ref. Table 4.1.2). To examine the nature of this significant interactional effect among emotional maturity, hardiness and job satisfaction (EM × H × JS), we decompose this three way interaction into two separate two way interactions split by one of the three independent variables’ variation. In this case we consider hardiness × job satisfaction interaction separately for each value of emotional maturity (i.e. emotionally mature and emotionally immature levels) as given in Table 4.5.4.

**Table 4.5.4: A 2×2 table of means of hardiness and job satisfaction for each level of emotional maturity.**

<table>
<thead>
<tr>
<th>Groups</th>
<th>Emotionally mature</th>
<th>Emotionally immature</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Job satisfied</td>
<td>Job dissatisfied</td>
</tr>
<tr>
<td>Hardy</td>
<td>310.44</td>
<td>285.87</td>
</tr>
<tr>
<td>Non hardy</td>
<td>295.93</td>
<td>281.49</td>
</tr>
</tbody>
</table>
Figure 4.7: Hardiness × Job satisfaction interaction for emotionally mature teachers.
Figure 4.8: Hardiness × Job satisfaction interaction for emotionally immature school teachers.
The graph for hardy and non hardy teachers against job satisfaction variation for emotionally mature group is shown in Figure 4.7 and the graph for hardy and non hardy teachers against job satisfaction variation for emotionally immature teachers is shown in Figure 4.8. As is evident from Figure 4.7 and Figure 4.8, the hardiness × job satisfaction interaction for each value of emotional maturity variation is not same and is of different order and form in both the graphs. It may therefore be concluded that there exist an interaction among EM × H × JS with respect to teaching effectiveness of school teachers thereby supporting the result obtained by F- ratio. In Figure 4.7, we observe an ordinal interaction in which the two lines are neither parallel nor they cross each other, which is quite different from the disordinal interaction as depicted in Figure 4.8. Disordinal interaction is said to exist when the lines cross each other. Therefore on account of differences observed in the graphs as seen in Figure 4.7 and Figure 4.8, it may be concluded that there exist an interaction effect among emotional maturity, hardiness and job satisfaction in respect of teaching effectiveness of school teachers.

4.6) To study the combined and individual effects of selected independent variables viz. emotional maturity, hardiness and job satisfaction on teaching effectiveness of school teachers

In order to find out the combined and individual effects of the selected independent variables viz. emotional maturity, hardiness and job satisfaction on teaching effectiveness of school teachers, stepwise multiple regression analysis was applied. The results of multiple regression analysis are presented in Table 4.6.1, 4.6.2 and 4.6.3.

Table 4.6.1: Model summary for Regression Analysis.

<table>
<thead>
<tr>
<th>Predictors</th>
<th>R</th>
<th>R²</th>
<th>R² adj.</th>
<th>Std. error</th>
<th>ΔR²</th>
<th>F change</th>
</tr>
</thead>
<tbody>
<tr>
<td>EM</td>
<td>.556</td>
<td>.310</td>
<td>.308</td>
<td>21.187</td>
<td>.310</td>
<td>268.172**</td>
</tr>
<tr>
<td>EM, JS</td>
<td>.659</td>
<td>.434</td>
<td>.432</td>
<td>19.195</td>
<td>.125</td>
<td>131.566**</td>
</tr>
<tr>
<td>EM, JS, H</td>
<td>.718</td>
<td>.515</td>
<td>.512</td>
<td>17.789</td>
<td>.081</td>
<td>99.073**</td>
</tr>
</tbody>
</table>

**Significant at 0.01 level; p < 0.01**
Table 4.6.2: ANOVA table for final model.

<table>
<thead>
<tr>
<th></th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>2000207.552</td>
<td>3</td>
<td>66735.851</td>
<td>210.883**</td>
</tr>
<tr>
<td>Residual</td>
<td>188609.513</td>
<td>596</td>
<td>316.459</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>388817.065</td>
<td>599</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Significant at 0.01 level; p < 0.01

Table 4.6.3: Coefficients for final model.

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Unstandardised Coefficient</th>
<th>Standardised Coefficient</th>
<th>t</th>
<th>Simple r</th>
<th>Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Standard Error of B</td>
<td>Beta</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>252.988</td>
<td>4.589</td>
<td>-55.129</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EM</td>
<td>-.261</td>
<td>.017</td>
<td>-.453</td>
<td>-15.496**</td>
<td>-.556</td>
</tr>
<tr>
<td>JS</td>
<td>.523</td>
<td>.042</td>
<td>.359</td>
<td>12.387**</td>
<td>.448</td>
</tr>
<tr>
<td>H</td>
<td>.292</td>
<td>.029</td>
<td>.286</td>
<td>9.954**</td>
<td>.355</td>
</tr>
</tbody>
</table>

**Significant at 0.01 level; p < 0.01

It is observed in tables 4.6.1, 4.6.2 and 4.6.3 that emotional maturity, hardiness and job satisfaction in combination contributed significantly to the teaching effectiveness \( (F (3, 596) = 210.883, p < 0.01) \) of school teachers. As observed from Table 4.6.3, all tolerance values are close to one, Tolerance, gives a value between zero and one, which is the proportion of a variable's variance not accounted for by the other independent variables in the regression. Values close to zero show that there are linear relationships among the independent variables that will cause computational problems. In that case, one or more of the independent variables should be removed. Thus, on account of tolerance values, it is concluded that a low level of multicollinearity is present (tolerance = .951, .967, .982 for emotional maturity, job satisfaction, and hardiness) respectively (ref. Table 4.6.3). Using the total scores of emotional maturity, hardiness and job satisfaction to predict teaching effectiveness of school teachers results in a multiple R of .716 which accounted for 51.5 % variance of
teaching effectiveness scores. As apparent from the standardised coefficient (β), bearing t value that is significant at 0.01 level, emotional maturity has the strongest predictive power (β = - .453; p < 0.01) for teaching effectiveness of school teachers and contributed about 31.0 % in teaching effectiveness of school teachers (ΔR² = .310, F (1, 598) = 268.172; p < 0.01). However the negative sign is obtained due to negatively worded items on emotional maturity scale suggesting that higher the score on EMS (corresponding to emotional immaturity), lower is the teaching effectiveness of the teacher that again validated our first finding obtained from factorial ANOVA.

Job satisfaction emerged as the next significant potential predictor (β = .359; p < 0.01) of teaching effectiveness of school teachers exhibiting a positive influence and contributed approximately 12.5 % (ΔR² = .125, F (1, 597) = 131.566; p < 0.01) of variance in explaining teaching effectiveness of school teachers. It means increase in job satisfaction level also corresponds to increase in teaching effectiveness of school teachers (r = .352). In the same way hardiness further increases the variance by 8.1 % making the prediction to improve further in a significant manner (ΔR² = .081, F (1, 596) = 99.073; p < 0.01) and exerts a positive influence (β = .283; p < 0.01) on teaching effectiveness of school teachers revealing that higher the level of hardiness, higher is the effectiveness in teaching (r = .377). Figure 4.9 gives an account of the relative percent contribution of the significant predictors in terms of shared common variance in the dependent variable teaching effectiveness of school teachers.

![Combined shared variance = 51.5 %](image)

**Figure 4.9:** Percent contribution of significant predictors in the dependent variable teaching effectiveness of school teachers.
4.7) To study the effect of some demographic variables (gender, marital status, and teaching Experience) on teaching effectiveness of school teachers

Three demographic variables have been undertaken for the present study viz. gender, marital status and teaching experience are discussed one by one in the following subsections.

4.7.1) To study the effect of gender on teaching effectiveness of school teachers

In order to determine the effect of gender on teaching effectiveness of school teachers, independent sample t - test was employed which gives the results as shown in Table 4.7.1.

Table 4.7.1: Gender wise comparison of teaching effectiveness of school teachers.

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>df</th>
<th>t</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>322</td>
<td>286.67</td>
<td>26.25</td>
<td>598</td>
<td>0.572</td>
<td>N.S.</td>
</tr>
<tr>
<td>Male</td>
<td>278</td>
<td>285.47</td>
<td>24.58</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The data in Table 4.7.1 show that the mean difference in teaching effectiveness of female school teachers (M= 286.67, SD=26.25) and male schools teachers (M=285.47, SD= 24.58) is not significant (t (598) = 0.572, p > 0.05) indicating that there is no significant effect of gender on teaching effectiveness of school teachers. In other words, teaching effectiveness of school teachers is not influenced by their gender differences. This can be observed clearly from Figure 4.10.
4.7.2) To study the effect of marital status on teaching effectiveness of school teachers

To determine the effect of marital status on teaching effectiveness of school teachers, t-test was applied. The results obtained by t-test are presented in Table 4.7.2 and for clearly understanding marital status effect, mean value comparison of married and unmarried teachers is depicted in Figure 4.11.

Table 4.7.2: Comparison of teaching effectiveness of married and unmarried school teachers.

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>df</th>
<th>t</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unmarried</td>
<td>244</td>
<td>293.74</td>
<td>24.841</td>
<td>598</td>
<td>6.261**</td>
<td>0.01</td>
</tr>
<tr>
<td>Married</td>
<td>356</td>
<td>280.89</td>
<td>24.607</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Significant at 0.01 level; p < 0.01**
On the perusal of Table 4.7.2, a significant difference ($p < 0.01$) is noticed between the teaching effectiveness of married and unmarried teachers as discerned by significant t-value suggesting that there is a significant influence of marital status of school teachers on their degree of teaching effectiveness. Figure 4.11 provides a comparative account of mean teaching effectiveness scores of married and unmarried teachers which clearly shows that unmarried school teachers are more effective in teaching than their married counterparts.

### 4.7.3) To study the effect of years of teaching experience on teaching effectiveness of school teachers

The total sample of school teachers is divided into three groups on the basis of years of teaching experience data. These are: (a) Teachers having (0-10) years of teaching experience. (b) Teachers having (11-20) years of teaching experience. (c) Teachers having more than twenty years (> 20) of teaching experience. Sample wise distribution reveals that most of the teachers included in the sample are having (11-20) years of teaching experience which is graphically shown in Figure 4.12.
In order to find out the effect of years of teaching experience on teaching effectiveness of school teachers, one way ANOVA was applied. The results are presented in Table 4.7.3.1.

**Table 4.7.3.1: F-test for comparing teaching effectiveness of school teachers based on years of teaching experience.**

<table>
<thead>
<tr>
<th></th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F-ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>10232.050</td>
<td>2</td>
<td>5116.025</td>
<td>8.068**</td>
</tr>
<tr>
<td>Within</td>
<td>378585.015</td>
<td>597</td>
<td>634.146</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>388817.065</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Significant at 0.01 level, p < 0.01**

One way ANOVA reveals that teaching effectiveness at different years of teaching experience differed markedly and significantly (F (2, 597) =8.068; p < 0.01) from one another clearly indicating a significant effect of years of teaching experience on teaching effectiveness of school teachers. To examine the specific significant differences among the three groups compared, t-test was applied between possible pairs which give the results as presented in Table 4.7.3.2.
Table 4.7.3.2: t-value comparison of three groups of teachers based on years of experience.

<table>
<thead>
<tr>
<th>Teaching Experience</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>0-10 years Exp 1</th>
<th>11-20 years Exp 2</th>
<th>&gt;20 years Exp 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10 years Exp 1</td>
<td>167</td>
<td>283.63</td>
<td>25.17</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11-20 years Exp 2</td>
<td>283</td>
<td>283.79</td>
<td>24.23</td>
<td>-.069</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;20 years Exp 3</td>
<td>150</td>
<td>293.27</td>
<td>26.89</td>
<td>-3.295**</td>
<td></td>
<td>.3725**</td>
<td></td>
</tr>
</tbody>
</table>

** Significant at 0.01 level; p < 0.01

Figure 4.13. Comparison of teaching effectiveness of school teachers of different teaching experience groups.

Results of t-test indicates that different years of teaching experience exhibited a direct and significant (p < 0.01) relationship with teaching effectiveness of school teachers with significant differences (p < 0.01) in teaching effectiveness of teachers having 0-10 years and more than 20 years of teaching experience groups and between teachers having 11-20 and more than 20 years of teaching experience (Table 4.7.3.2). However there is no significant (p > 0.01) difference between the mean teaching effectiveness...
scores of teachers having 0-10 years of teaching experience and 11-20 years of teaching experience groups. A comparative account of the teaching effectiveness of the three groups is presented in Figure 4.13. On account of mean values and graphical representation, it can be said that the teaching effectiveness of school teachers increases with the increase in years of their teaching experience.

4.8) To study the combined effect of emotional maturity, hardiness and job satisfaction on teaching effectiveness of school teachers with respect to different demographic variables

4.8.1) To study the combined effect of emotional maturity, hardiness and job satisfaction on teaching effectiveness of school teachers with respect to gender

To explain the extent of contribution of combined effect of emotional maturity, hardiness and job satisfaction on teaching effectiveness of male and female school teachers, the results of regression analysis are presented in Table 4.8.1.

Table 4.8.1: Regression Analysis of teaching effectiveness with independent variables with respect to gender.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Independent variables</th>
<th>Unstandardised coefficient</th>
<th>Standardised coefficient</th>
<th>t</th>
<th>Simple r</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>B</td>
<td>Standard Error of B</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>Constant</td>
<td>257.583</td>
<td>6.396</td>
<td>40.270</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EM</td>
<td>-.252</td>
<td>.024</td>
<td>-.438</td>
<td>-10.565**</td>
</tr>
<tr>
<td></td>
<td>JS</td>
<td>.527</td>
<td>.062</td>
<td>.348</td>
<td>8.551**</td>
</tr>
<tr>
<td></td>
<td>H</td>
<td>.234</td>
<td>.044</td>
<td>.221</td>
<td>5.264**</td>
</tr>
<tr>
<td>Male</td>
<td>Constant</td>
<td>245.800</td>
<td>6.660</td>
<td>36.907</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EM</td>
<td>-.287</td>
<td>.024</td>
<td>-.497</td>
<td>-11.836**</td>
</tr>
<tr>
<td></td>
<td>JS</td>
<td>.556</td>
<td>.059</td>
<td>.401</td>
<td>9.366**</td>
</tr>
<tr>
<td></td>
<td>H</td>
<td>.372</td>
<td>.041</td>
<td>.381</td>
<td>9.038**</td>
</tr>
</tbody>
</table>

**Significant at 0.01 level; p < 0.01

Female: $R^2_{adj} = .504; F (3, 318) = 109.687, p < 0.01$

Male: $R^2_{adj} = .531; F (3, 274) = 105.695, p < 0.01$

Results of Table 4.8.1 reveal that emotional maturity, hardiness and job satisfaction in combination contributed significantly to both male ($F (3, 274) = 105.695, p < 0.01$) and female ($F (3, 318) = 109.687, p < 0.01$) teachers’ degree of teaching.
effectiveness. Multiple R of .732 is obtained in case of male school teachers using the scores of independent variables for predicting teaching effectiveness of school teachers that accounted for 53.1% variance in their teaching effectiveness scores while in female teachers, a multiple R of .713 is observed which accounted for 50.4% variance in their teaching effectiveness. From the calculated values of $\beta$ which came out to be positive and significant for job satisfaction and hardiness, it may be concluded that higher scores of job satisfaction and hardiness corresponds to higher teaching effectiveness scores in both male and female school teachers. However, negative $\beta$ associated with emotional maturity corresponds to negative relationship between the scores obtained on Emotional Maturity Scale (EMS) and Teacher Effectiveness Scale (TES). It means higher score on EMS showing emotional immaturity corresponds to lower teaching effectiveness score. To be specific, teaching effectiveness scores increases with emotional maturity (lower scores on EMS) and decreases with emotional immaturity in both male and female school teachers. Examination of $\beta$ weight reveals emotional maturity as the most potential predictor of teaching effectiveness ($\beta = -.497, p < .01$) followed by job satisfaction ($\beta = .401, p < .01$) and hardiness ($\beta = .381, p < .01$) in male teachers. Similar trend is observed in case of female teachers showing emotional maturity as the strongest potential predictor ($\beta = -.438, p < .01$) that is followed by job satisfaction ($\beta = .348, p < .01$) and hardiness ($\beta = .221, p < .01$).

4.8.2) To study the combined effect of emotional maturity, hardiness and job satisfaction on teaching effectiveness of school teachers with respect to marital Status

To explain the extent of combined effect of emotional maturity, hardiness and job satisfaction on teaching effectiveness of married and unmarried school teachers, the results of regression analysis are presented in table 4.8.2.
Table 4.8.2: Regression Analysis of teaching effectiveness with independent variables with respect to marital status.

<table>
<thead>
<tr>
<th>Marital status</th>
<th>Independent variables</th>
<th>Unstandardised coefficient</th>
<th>Standardised coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>B</td>
<td>Standard Error of B</td>
</tr>
<tr>
<td>Married</td>
<td>Constant</td>
<td>255.620</td>
<td>5.883</td>
</tr>
<tr>
<td></td>
<td>EM</td>
<td>-.261</td>
<td>.021</td>
</tr>
<tr>
<td></td>
<td>JS</td>
<td>.485</td>
<td>.061</td>
</tr>
<tr>
<td></td>
<td>H</td>
<td>.287</td>
<td>.040</td>
</tr>
<tr>
<td>Unmarried</td>
<td>Constant</td>
<td>245.800</td>
<td>8.400</td>
</tr>
<tr>
<td></td>
<td>EM</td>
<td>-.246</td>
<td>.033</td>
</tr>
<tr>
<td></td>
<td>JS</td>
<td>.575</td>
<td>.067</td>
</tr>
<tr>
<td></td>
<td>H</td>
<td>.293</td>
<td>.050</td>
</tr>
</tbody>
</table>

**Significant at 0.01 level; p < 0.01

*Married: R² adj. = .441; F (3, 352) = 94.451, p < 0.01

*Unmarried: R² adj. = .533; F (3, 240) = 93.339, p < 0.01

It is clear from Table 4.8.2 that emotional maturity, hardiness and job satisfaction in combination contributed significantly to both married (F (3, 352) = 94.451; p < 0.01) and unmarried (F (3, 240) = 93.339; p < 0.01) school teachers’ degree of teaching effectiveness. A multiple R of .668 is obtained for predicting teaching effectiveness of married school teachers from the scores of the selected independent variables viz. emotional maturity, hardiness and job satisfaction which accounted for 44.1 % variance of teaching effectiveness scores of married school teachers while in case of unmarried teachers, a multiple R of .734 is observed that accounted for 53.3% variance of their teaching effectiveness. Higher scores of job satisfaction and hardiness corresponds to higher scores of teaching effectiveness in both married and unmarried teachers, but higher scores of emotional maturity are associated with lower teaching effectiveness scores of married as well as unmarried teachers.

Examination of β weights reveals emotional maturity as the most potential predictor of teaching effectiveness (β = -.499, p < .01) followed by job satisfaction (β = .323, p < .01) and hardiness (β = .286, p < .01) in married teachers. Similarly in unmarried teachers emotional maturity is found to be the most potential predictor of teaching effectiveness (β = -.402, p < .01) followed by job satisfaction (β = .377, p < .01) and hardiness (β = .296, p < .01).
4.8.3) To study the combined effect of emotional maturity, hardiness and job satisfaction on teaching effectiveness of school teachers with respect to years of teaching experience

In order to find out the combined effect of emotional maturity, hardiness and job satisfaction on teaching effectiveness of school teachers having different years of teaching experience, multiple regression analysis was applied that provides the results for the three groups as presented in Table 4.8.3.

Table 4.8.3: Regression Analysis of teaching effectiveness with independent variables with respect to teaching experience.

<table>
<thead>
<tr>
<th>Teaching Experience</th>
<th>Independent variables</th>
<th>Unstandardised Coefficient</th>
<th>Standardised coefficient</th>
<th>t</th>
<th>Simple r</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>B</td>
<td>Standard Error of B</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>0-10 years</td>
<td>Constant</td>
<td>246.99</td>
<td>8.025</td>
<td>30.776</td>
<td>.546</td>
</tr>
<tr>
<td></td>
<td>EM</td>
<td>-.246</td>
<td>.030</td>
<td>-.449</td>
<td>-8.260**</td>
</tr>
<tr>
<td></td>
<td>JS</td>
<td>.527</td>
<td>.075</td>
<td>.380</td>
<td>7.043**</td>
</tr>
<tr>
<td></td>
<td>H</td>
<td>.308</td>
<td>.054</td>
<td>.308</td>
<td>5.724**</td>
</tr>
<tr>
<td>11-20 years</td>
<td>Constant</td>
<td>266.594</td>
<td>7.054</td>
<td>37.794</td>
<td>.584</td>
</tr>
<tr>
<td></td>
<td>EM</td>
<td>-.280</td>
<td>.024</td>
<td>-.511</td>
<td>-11.564**</td>
</tr>
<tr>
<td></td>
<td>JS</td>
<td>.491</td>
<td>.062</td>
<td>.347</td>
<td>7.909**</td>
</tr>
<tr>
<td></td>
<td>H</td>
<td>.182</td>
<td>.044</td>
<td>.183</td>
<td>4.163**</td>
</tr>
<tr>
<td>&gt;20 years</td>
<td>Constant</td>
<td>241.947</td>
<td>8.742</td>
<td>27.676</td>
<td>.527</td>
</tr>
<tr>
<td></td>
<td>H</td>
<td>.439</td>
<td>.056</td>
<td>.424</td>
<td>7.786**</td>
</tr>
<tr>
<td></td>
<td>EM</td>
<td>-.236</td>
<td>.036</td>
<td>-.365</td>
<td>-6.572**</td>
</tr>
<tr>
<td></td>
<td>JS</td>
<td>.509</td>
<td>.087</td>
<td>.332</td>
<td>5.843**</td>
</tr>
</tbody>
</table>

**Significant at 0.01 level; p < 0.01
(0-10 years): $R^2_{adj} = .529; F (3, 163) = 63.179, p < 0.01$
(11-20 years): $R^2_{adj} = .473; F (3, 279) = 85.254, p < 0.01$
(>20 years): $R^2_{adj} = .577; F (3, 146) = 68.712, p < 0.01$

On the perusal of Table 4.8.3, we find that emotional maturity, hardiness and job satisfaction in combination contributed significantly to teaching effectiveness of school teachers having (0-10) years of teaching experience ($F (3, 163) = 63.179, p < 0.01$); teachers with (11-20) years of teaching experience ($F (3, 279) = 85.254, p < 0.01$) and also for teachers having more than 20 years of teaching experience ($F (3, 146) = 68.712, p < 0.01$). Using the scores of emotional maturity, hardiness and job satisfaction for predicting teaching effectiveness scores gives a multiple R of .733 for teachers having (0-10) years of teaching experience which accounted for 52.9%
variance in their teaching effectiveness. In case of teachers having (11-20) years of teaching experience, a multiple R of .692 is obtained that accounted for 47.3% variance in their teaching effectiveness scores. However for teachers having (>20) years of teaching experience, a multiple R of .765 is resulted which accounted for 57.7% variance of their teaching effectiveness scores. Higher scores of job satisfaction and hardiness corresponds to higher teaching effectiveness scores, and higher scores of emotional maturity, indicating emotional immaturity corresponds to lower teaching effectiveness scores in all the three groups of school teachers having different years of teaching experience. Examination of β weights reveals emotional maturity as the strongest potential predictor (β = -.449, p < 0.01) followed by job satisfaction (β = .380, p < 0.01) and hardiness (β = .308, p < 0.01) for teachers having (0-10) years of teaching experience. Similar trend is observed for teachers having (11-20) years of teaching experience revealing emotional maturity to be the strongest potential predictor (β = -.511, p < 0.01) followed by job satisfaction (β = .347, p < 0.01) and hardiness (β = .183, p < 0.01). However in case of teachers having more than twenty (> 20) years of teaching experience, hardiness emerged as the strongest potential predictor (β = .424, p < 0.01) followed by emotional maturity (β = -.365, p < 0.01) and job satisfaction (β = .332, p < 0.01).

A comparative account of the potential predictors from among the three independent variables on the basis of absolute β values with respect to different demographic variables is depicted in Figure 4.14.

![Figure 4.14: Comparison of prediction ability of emotional maturity, hardiness and job satisfaction for teaching effectiveness with respect to different demographic variables.](image)