

Table 12. ARIMA model coefficients for EN time series

EP	N1	N2	N3	N4	N5	N6	N7
μ_2	15.755	142.782	43.1048	6.08128	10	25.5074	3.96253
ϕ_1	0.740736	-0.824085	-0.516558	-0.51132	0.703101	-0.68766	-0.374596
ϕ_2	0.0563402	-0.641391	0.761614	0.835944	0.195712	0.26298	0.0444541
ϕ_3	-0.182478	-0.339772	0.351978	0.31455	0.147677	0.365912	0.285178
ϕ_4	0.312847	-0.324474	-0.217637	-0.0607815	0.246242	0.293432	0.389912
ϕ_5	-0.286072	0.00139261	-0.291442	0.287755	-0.499499	0.25197	0.590027
λ_2	-0.402673	0.543836	1.	1.	-0.422595	0.810112	1.
Variance	19.201	19.1188	22.1452	4.52599	9.98171	4.82513	7.51241
Standard error	8.67143	7.83564	10.4572	1.7213	4.33461	2.24006	2.88526

Source: Computed values from measured data using MatLab

Due to the values obtained for the variances values and standard error values (see Table 12), ARIMA(5,0 ,1) for EN time series must be adjusted. We shall study the co-integration between EP and EN, respectively EN and EP time series, using Engle-Granger test. Engle-Granger tests assess the null hypothesis of no co-integration among the time series in Y.

MatLab command used:

`[h,pValue,stat,cValue] = egcitest(Y,'test',{t1,t2})`

h = 0 indicate a failure to reject the null.

h = 1 (true) indicate rejection of the null in favour of the alternative of co-integration.

pValue= p-values are left-tail probabilities.

Results of co-integrated series could be seen in Table 13, in that the EP/EN time series are co-integrated, but only for N2, N6 and N7 the EN/EP time series are co-integrated.

Table 13. Engle-Granger test of co-integration for EP and EN and time series

EP/EN	EN/EP
h1 = 1 1; pValue1= 0.0090952 0.0056662	h1 = 0 0; pValue1 = 0.2910 0.1741
h2 = 0 1; pValue2 = 0.0653 0.0442	h2 = 1 1; pValue2 = 0.0105 0.0068
h3 = 1 1; pValue3 = 0.001 0.001	h3 = 0 0; pValue3 = 0.2565 0.0683
h4 = 1 1; pValue4 = 0.011567 0.0077753	h4 = 0 0; pValue4 = 0.1366 0.1160
h5 = 1 1; pValue5 = 0.041753 0.037641	h5 = 0 0; pValue5 = 0.6835 0.6528
h6 = 1 1; pValue6 = 0.0126 0.0131	h6 = 1 1; pValue6 = 0.0107 0.0088
h7 = 1 1; pValue7 = 0.0045 0.0044	h7 = 1 1; pValue7 = 0.0045 0.0044

Source: Computed values from measured data using MatLab

2.4. Team behaviour study

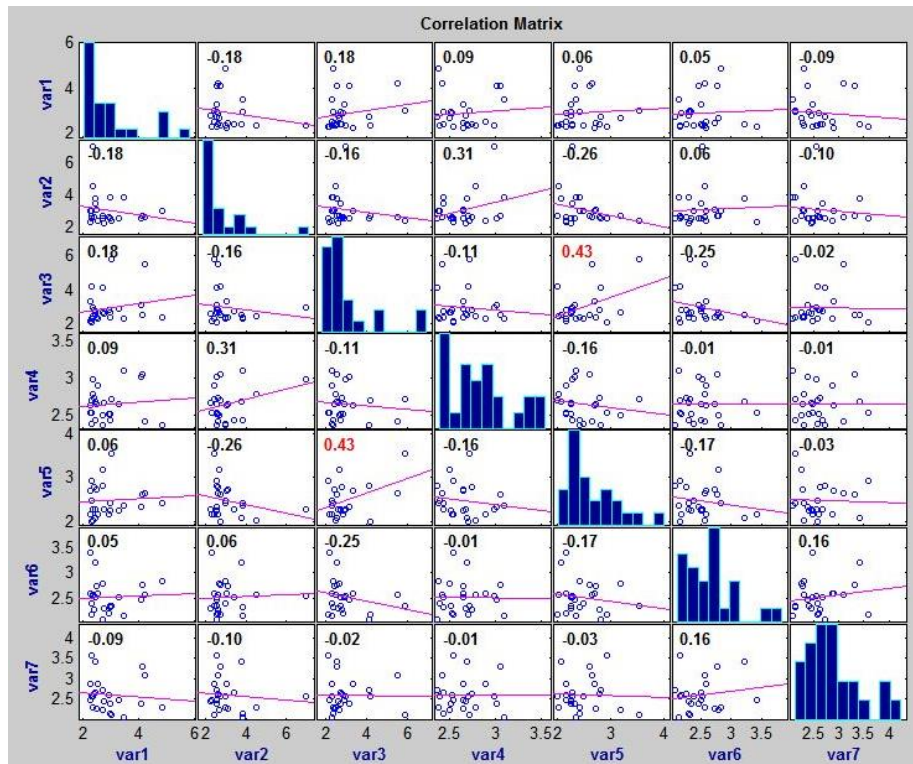


Figure 2: Correlation Matrix for EP time series
Source: Computed values from measured data using MatLab

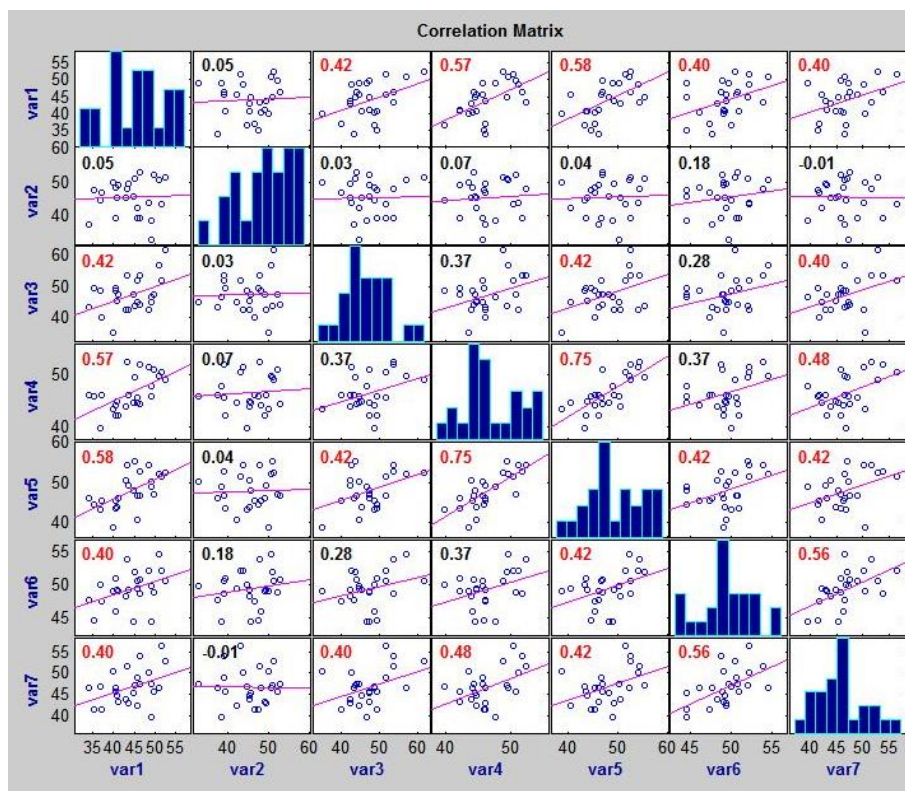


Figure 3: Correlation Matrix for EN time series

3. DISCUSSION OF THESE FINDINGS IN RELATION TO HRM

First of all it is important to keep in mind that the sample size of this preliminary case study is small. It is very likely that the concrete findings of this study only relates to the specific company, and perhaps only in a specific time interval. However, as certain statistical relationships are found, this study opens up for the possibility that, in principle, it may be possible to use the assessment of the energetic structure of an employee in order to improve that person's performance. The present findings will, at best, be included in a vaster body of knowledge, once more, and larger, companies choose to join the study. However, until then it serves as a sign that there might be more to come for in this direction.

Therefore, with this in mind, and based on these findings it appears to be possible to conclude certain elements, which may offer value within the domain of Human Resource Management.

First of all, that the impulse given on specific days also generates an impact on the following day. Regarding Emotional Pressure (EP) it is the third day, Wednesday, which follows the second day, Tuesday. For Energy (EN) the third day follows the second, as with Emotional Pressure, and furthermore does the fifth day, Friday, follow the fourth day, Thursday. Thus, an efficient leader or company may use this knowledge to optimise the workflow during the week by for example motivating, and/or relaxing, the employees Tuesday, and possibly Thursday as well, in order to get the maximum outcome. This knowledge may possibly also be used to maximise the outcomes of for example stress reduction programs, which may then become even more efficient, and thus cost effective.

Secondly, this data indicate that there is an inverse relationship between the spare time from Wednesday to Thursday compared with that between Tuesday to Wednesday. This may possibly be used to optimise the outcome of for example social activities in the company, or even company sponsored spare time activities like fitness, sports, etc., yet it may also be that the company should just let the spare time be the sole property of the employee.

Furthermore does the data suggest that the employees can be divided into different groups, in this case two, however that may vary between different departments and/or organisations; which then need to be managed differently. Besides this may the possibility to segment the employees based on objective and quantitative criteria furthermore enables the possibility to optimise the management of the employees on a more individually adjusted level.

And, it looks like that, in the majority of the cases, the Energy level influences the Emotional Pressure. Thus it seems that it may be that the optimal use of the resources of the company is to increase the Energy of the employees, and then the Emotional Pressure (Stress) will indirectly be impacted. It has already been concluded in previously mentioned articles that the increase of the Energy is possible through different activities, such as Mindfulness, Aikido, etc.

Finally does the data indicate that there, generally speaking, is a connection between the results of the different employees. This may, in time, possibly be used to optimise teams, departments, and even the employees hired into the company, if it may be concluded that for example well-connected groups are more harmonious, productive, and thus generate better company performance.

4. CONCLUSIONS

It is clear that this study is a preliminary case study, which needs a substantial increase in the empirical data before we may be able to draw general conclusions, which may be used within the domain of Human Resource Management.

However, based on the analysis of the data from this study, it appears that the energetic measurements with for example the ElectroPhotonic Imaging Device may offer data which can help HR scholars and practitioners to improve the workflow, and thus probably also company performance.

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