THE RELATION BETWEEN AN EMPLOYEE'S ENERGY PROFILE AND THEIR PROFESSIONAL PERFORMANCE

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Abstract. *The present paper is a trans-disciplinary study examining the relation between the energy profile of a person and his/her professional performance. It is based on an empirical study conducted within a large multi-national shipping company whose employees had their energy profile assessed on a monthly basis for more than a year. All measurements were done using Korotkov's Electrophotonic Imaging Device. These measurements were then correlated with selected performance data from the company related to each employee: turnover, profit, and number of transports. The results of the study have shown that it is possible to make valid predictions regarding an employee's future performance based on that person's energy profile, at least in certain areas. It was found that measured levels of employee's energy and stress, assessed with the Electrophotonic Imaging Device, are valid predictors of the turnover and the number of transports generated by the respective employee. In this way, the connection between an employee's energy profile and their professional performance becomes clear. This can then be used to make objective and quantitative assessments about the future professional performance, not just of the assessed employee, but of other employees as well, because the proposed approach is based on universal principles and not on subjective evaluations. This research offers valuable information for both academia and practice, indicating a new way of predicting working performance that can be immediately used by companies to enhance staff performance and human resource management.*

Keywords: *human resource management; electrophotonic imaging; stress; energy; performance; HR assessment.*

Introduction

The aim of Human Resource Management is, among others, to enable a company to choose the employees with the highest expected future performance. Many different methods were developed in order to predict future performance: Cognitive Ability Tests, Job Try-Out, Educational level, and so on. These performance predictors may be good, at least good enough to be used in the vast majority of companies around the world to choose employees. However, even the best performance predictor (Cognitive Ability) does not have a predictive capacity of much more than 50% (Hunter & Hunter, 1984; Rynes et al., 2004, in Banfield & Kay, 2012). That is like flipping a coin in order to choose the best employee.

Given the aforementioned context, this paper presents a different performance predictor that might reveal new relevant aspects that, combined with one or more of the already known performance predictors, may improve human resource management. The suggested performance predictor is the energy profile of the human being, which has already been examined in connection with academic performance (measured as grades obtained at a university exam), where it was found to have a predictive capacity of approximately 71,43% (Torp, Marosy & Purcarea, 2015).

However, this is the first scientific study in a professional context, which provides concrete empirical data supporting the idea that it is possible to predict performance based on a person's energy profile. The advantage of proposed performance predictor resides mainly in its new and very different approach. In this regard, it may be argued that whereas the present array of performance predictors, in most cases, look at past performance in order to predict future performance, this proposed performance predictor is, analogically speaking, like calculating the remaining charge in the battery of your mobile phone, in order to predict how much battery "life" it has left.

The theoretical background of this approach is based on the quantum understanding of the universe, and, by extension, of the human being, as part of it. Furthermore, it is largely inspired by Einstein's scientific work and Stephen Hawking's view of the underlying structure of the human being. According to Einstein (Bodanis, 2000; Cox & Forshaw, 2009), everything in this universe consists of energy (whose connection with matter is given by the famous equation $E=MC^2$), and this energy, according to physics, is governed by four fundamental forces, electromagnetism being one of them. Stephen Hawking states that "*Electromagnetic forces are responsible for all of chemistry and biology"* (Hawking, 2010, p.133). Therefore, as the human being is partly a biological entity, it follows logically that it should be possible to make assessments of the human being based on their energy profile. These assessments would be even deeper and more objective than what is obtainable through present day assessments that are based on the human being's biological level, or levels derived thereof, such as psychological or sociological.

Methodological background

In 1777, the German physicist George von Lichtenberg accidently discovered that when touching a glass-coated metal electrode that was connected to voltage, a burst of sparkles would emerge. Based on this, Lichtenberg concluded that a certain energy existed in the human body (Korotkov, 2014). This energy was later called "biophotons" by another German scientist, Fritz-Albert Popp (Mohirta, 2013).

Approximately a hundred years later, Nicola Tesla was born. Beside a series of genius inventions, he also experimented with sending electricity through the body of different people, thereby creating a halo around them. He discovered that different people had different halos; some, like himself, were completely surrounded by this halo, others had practically no halo at all (Korotkov, 2014). Later, as these differences in the halo of different people began to be studied systematically, research showed that the halo reflected the inner state of the being and that it changed accordingly. The most dedicated people who studied this halo, the scientists who independently and accidentally rediscovered it are Valentina and Semyon Kirlian, who also gave their name to this effect (Korotkov, 2014). Through their research, they created the foundation for the Electrophotonic Imaging Device, which is the device we used to conduct the empirical assessments presented in this article.

Electrophotonic Imaging Device, as well as its functioning, is described in detail in Korotkov (2002), and it is, amongst others, patented under № 2141250, № 2217047, № 2234854, № 41626. The Electrophotonic Imaging technique measures the biophotons emitted by the human being. These are then used to assess their stress and energy level, among others. In previous scientific studies (Torp, Marosy & Purcarea, 2014; Torp, Marosy & Purcarea, 2015; Torp, Mandrea & Cipu, 2015; Torp, Bunea & Cipu, 2016, Torp, Cipu & Purcarea, 2016; Torp & Cipu, 2016) it was proposed and discussed how these measurements can be used in HR assessment. It was discussed, amongst others, how this kind of assessment might improve the workday, enabling people to work when their energy level is the highest and thus having the utmost performance. However, this is the first scientific study in a professional context, which provides concrete empirical studies supporting the idea that it is possible to predict performance based on a person's energy profile.

Research design, measurement and data collection

This study is based on empirical data obtained through monthly measurements with the Electrophotonic Imaging Device conducted for a year and a half between October 2015 and March 2017 in a logistics company. The participants were measured every second Tuesday of the month, at approximately 11.00 o'clock, which was found to be the best possible moment based on the measurement guidelines given by Korotkov (2010). Eight employees participated in the study and a total of 78 measurements were obtained, but seven measurements were dropped based on incompleteness or inaccuracy reasons, and thus only 71 complete data entries were kept for the final analysis.

In the same period, the performance data of each individual employee was provided by the company. Thus, on one side there is data regarding the monthly stress and energy

level of each employee, and on the other side is there the objective performance data for each employee. That is the monthly turnover, number of transports, and profit.

The essence of this study is to understand this data, and thus to find out if and how the energy profile of the human being, measured with the Electrophotonic Imaging Device, can be used to predict professional performance.

The following eight hypotheses and the conceptual model presented in Figure 1 were proposed regarding the prediction of professional performance based on the assessment of the energy profile of the human being:
H1: Electromagnetic Frequency Domains (EFD), as the foundation of the energy profile of the human being, predict person's Energy level.
H2: EFD also predict person's Stress level (emotional pressure).
H3: Energy influences Turnover.
H4: Energy influences Profit.
H5: Energy influences the Number of Transports.
H6: There is a positive relationship between Stress and Turnover.
H7: There is a positive relationship between Stress and Profit.
H8: There is a positive relationship between Stress and Number of Transports.

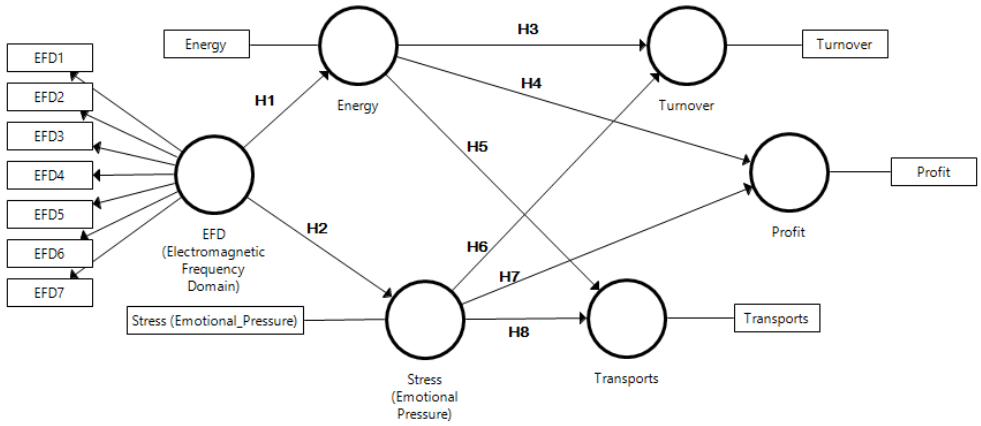

Figure 1. Conceptual model with hypotheses

Findings

The conceptual model was developed to test potential relations between the person's energy profile and their professional performance based on the items and constructs detailed in Table 1.

As observable in Table 1 and Figure 1, five (Energy, Stress, Turnover, Transports, Profit) of the six constructs are single-item constructs, while EFD (Electromagnetic Frequency Domain) was measured using the uni-dimensional scale with 7 items (EFD1, EFD1, EFD2, EFD3, EFD4, EFD5, EFD6, EFD7).

As a consequence, the first step of our approach was to test the uni-dimensionality and reliability of the EFD scale, and we performed a Factorial Analysis based on Principal Components extraction, followed by a scale reliability analysis.

Table 1. Measured dimensions and indicators

Measured items	**Constructs (Dimensions)**
EFD1 (Electromagnetic Frequency Domain 1)	EFD (Electromagnetic Frequency Domain)
EFD2 (Electromagnetic Frequency Domain 2)	
EFD3 (Electromagnetic Frequency Domain 3)	
EFD4 (Electromagnetic Frequency Domain 4)	
EFD5 (Electromagnetic Frequency Domain 5)	
EFD6 (Electromagnetic Frequency Domain 6)	
EFD7 (Electromagnetic Frequency Domain 7)	
Energy	Energy
Stress (Emotional Pressure)	Stress(Emotional Pressure)
Turnover	Turnover
Transports	Transports
Profit	Profit

Scale uni-dimensionality was supported by the results of the factorial analysis reported below. The significance of KMO and Bartlett's Test (Table 1) indicate sampling adequacy, and a single Eigenvalue greater than 1 (Table 2) indicates uni-dimensionality (Table 3).

Table 2. Factorial Analysis: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.897
Bartlett's Test of Sphericity	Approx. Chi-Square	721.391
	Df	21
	Sig.	.000

Table 3. Factorial Analysis: Total Variance Explained

Component	**Initial Eigenvalues**			**Extraction Sums of Squared Loadings**		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.079	86.840	86.840	6.079	86.840	86.840
2	.365	5.216	92.055			
3	.204	2.912	94.967			
4	.143	2.048	97.015			
5	.090	1.282	98.297			
6	.065	.925	99.222			
7	.054	.778	100.000			
1 component extracted; Extraction Method: Principal Component Analysis						

Since the EFD scale was found to be valid (see Table 3) and reliable (Cronbach's α = 0.973), the values of the 7 items (EFD1, EFD1, EFD2, EFD3, EFD4, EFD5, EFD6, EFD7) were summed to obtain a continuous measure (Sum of EFD1 to EFD7) that was further used as the single indicator of the construct EFD (Electromagnetic Frequency Domain) in the analysis (Figure 2).

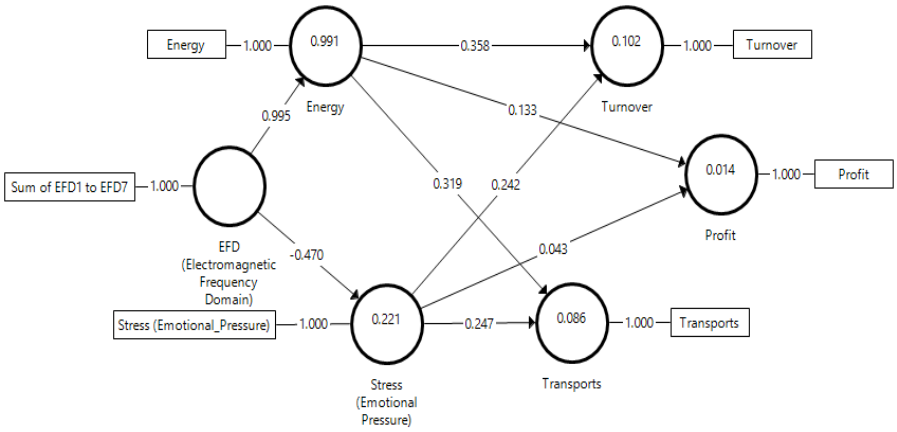

Figure 2. Coefficient of determination and Path Coefficients

The proposed model was tested using variance-based structural equation modeling via partial least squares (PLS) algorithm (Ringle et al., 2015). The adequacy of the measurement model was checked and reported (Table 4, Table 5, Table 6, Table 7) before structural model evaluation, as indicated in Hair et al. (2014).

The measurement model was found reliable and valid according to the criteria required for the assessment of a model containing only composite constructs, as ours. In this regard, the variance inflation factor VIF (see Table 6 and Table 7) taking values under the 3.3 limit (inner VIF between 1.0 and 1.3; outer VIF of 1.0), have shown that the criterion of non-colinearity among the model's constructs or indicators is fulfilled (Diamantopoulos & Siguaw, 2006), and results reported in Table 5 indicated discriminant validity as specified (Fornell & Larcker, 1981).

Table 4. Measured dimensions and indicators

Constructs (Dimensions)	**Indicators**	**Construct type**	**Loadings**
EFD (Electromagnetic Frequency Domain)	Sum of EFD1 to EFD7	single-indicator construct	1.000
Energy	Energy	single-item construct	1.000
Stress (Emotional Pressure)	Stress (Emotional Pressure)	single-item construct	1.000
Turnover	Turnover	single-item construct	1.000
Transports	Transports	single-item construct	1.000
Profit	Profit	single-item construct	1.000

Table 5. Discriminant validity: Fornell-Larcker criterion

	EFD	Energy	Profit	Stress	Transports	Turnover
EFD	1.000	-	-	-	-	-
Energy	0.995	1.000	-	-	-	-
Profit	0.104	0.113	1.000	-	-	-
Stress	-0.471	-0.487	-0.022	1.000	-	-
Transports	0.179	0.199	0.385	0.092	1.000	-
Turnover	0.237	0.240	0.605	0.068	0.446	1

Table 6. Collinearity Statistics (Inner VIF values)

Constructs	EFD	Stress	Energy	Profit	Transports	Turnover
EFD	-	1.000	1.000	0.000	0.000	0.000
Stress	-	-	-	1.312	1.312	1.312
Energy	-	-	-	1.312	1.312	1.312

Table 7. Collinearity Statistics (Outer VIF values)

Items	VIF
Sum of EFD1 to EFD7	1.000
Energy	1.000
Profit	1.000
Stress (Emotional Pressure)	1.000
Transports	1.000
Turnover	1.000

Since measurement model adequacy was established, the bootstrapping procedure with 5000 re-samples was applied according to Hair et al. (2014) and the results of the structural model evaluation (Figure 2) were reported in Table 8 and Table 9 and discussed below.

Statistical results (Table 8) indicated that EFD (Electromagnetic Frequency Domain) predicts both Energy and Stress, explaining 99,1% of the variance of Energy and 22,1% of the variance of Stress.

Regression analysis results (Table 9) indicated a highly significant positive relation between EFD (Electromagnetic Frequency Domain) and Energy ($\beta = 0.995$, $p<0.05$; out of zero confidence intervals C.I.; H1 hypothesis confirms), as well as a significant negative relation between EFD (Electromagnetic Frequency Domain) and Stress ($\beta = -0.471$, $p<0.05$; out of zero confidence intervals C.I.; H2 hypothesis confirms). The results have shown that proposed model (Figure 2, Table 8, Table 9) explains 10.2% of the Turnover variance ($R^2=0.102$), but only 8.6% of Transports ($R^2=0.086$), and almost no variance in Profit ($R^2=0.014$).

Table 8. Structural model: R-squared

Constructs	Coefficient of determination (R-squared)
Energy	0.991
Emotional Pressure	0.221
Turnover	0.102
Transports	0.086
Profit	0.014

The values and the statistical significance of the path coefficients support the assumed positive effect of Energy on Turnover (β = 0.358, p<0.05; out of zero confidence intervals C.I.; H3 hypothesis confirms) and the positive effect of Energy on Transports (β = 0.319, p<0.05; out of zero confidence intervals C.I.; H5 hypothesis confirms). Similarly, results outlined the significant positive relationship between Stress and Turnover (β = 0.242, p<0.05; out of zero confidence intervals C.I.; H6 hypothesis confirms) and the significant positive relationship between Stress and Transports (β = 0.248, p<0.05; out of zero confidence intervals C.I.; H8 hypothesis confirms), rejecting the assumption of a direct relationship between Stress and Profit (β = 0.043, p>0.05; n.s.), or a direct relationship between Energy and Profit (β = 0.134, p>0.05; n.s.). The hypotheses H4 and H7 were not confirmed in the actual setting which tested only the direct effects of Energy and Stress on Profit, without considering potential indirect relationships between these variables.

Finally, the total effects depicted in Table 8 highlight a significant indirect effect of EFD (Electromagnetic Frequency Domain) on Turnover (β = 0.242, p<0.05; out of zero confidence intervals C.I).

Table 9. Total effects

Effect	β	SE	T	P	C.I. 2.5%	C.I. 97.5%	Significance
Direct Effects							
EEF → Energy	0.995	0.002	678.5	0.000	0.992	0.997	significant
EFD → Stress	-0.471	0.094	5.005	0.000	-0.634	-0.264	significant
Energy → Turnover	0.358	0.110	3.266	0.001	0.156	0.578	significant
Energy → Transports	0.319	0.119	2.692	0.007	0.080	0.546	significant
Energy → Profit	0.134	0.084	1.588	0.112	-0.029	0.303	n.s
Stress → Profit	0.043	0.132	0.324	0.746	-0.136	0.406	n.s
Stress → Turnover	0.242	0.120	2.010	0.045	0.005	0.477	significant
Stress → Transports	0.248	0.114	2.163	0.031	0.012	0.463	significant
Indirect Effects							
EFD → Turnover	0.242	0.106	2.279	0.023	0.041	0.452	significant
EFD → Transports	0.201	0.110	1.833	0.067	-0.014	0.414	n.s
EFD → Profit	0.113	0.086	1.307	0.191	-0.097	0.251	n.s.

Discussion and conclusions

In the present study 6 out of the 8 proposed hypotheses were confirmed.

Hypothesis H1, stating that the EFDs predict Energy, as well as hypothesis H2, assuming that the EFDs predict Stress were both confirmed. Thus the importance of a scientific understanding of these EFDs cannot be emphasized too much, as they may provide a key to understanding the human being at a fundamental level. A level deeper than what contemporary science seems to be working at.

Hypothesis H3, that Energy predicts Turnover, as well as hypothesis H5, that Energy predicts the Number of Transports, confirms that understanding the energy level of the human being offers a valid HR assessment tool which can provide important information regarding an employee's future performance.

Hypothesis H6, as well as hypothesis H8, that Stress (emotional pressure) predicts Turnover and the Number of Transports, respectively, do, like hypotheses H3 and H5, show that the proposed HR assessment tool is a valid predictor of future performance. It needs to be mentioned that the relationships between Stress and Turnover, respectively between Stress and the Number of Transports were positive: in other words, a higher performance corresponds to increased levels of stress. This makes good sense, as it may be considered that increased activity generates stress, and at the same times, the increased activity also generates results. This, however, shows the importance of having employees, which are as little stressed as possible, because their stress level can increase more than for others before it becomes a risk to their well-being. This then justifies many of the contemporary HR initiatives aiming at diminishing stress; such as mindfulness, sport, exercise, healthy diet, etc.

Further examination is required to clarify the limitations of the HR assessment tool indicated by the results showing a non-significant direct effect of Energy on Profit (hypothesis H4 was not confirmed) and a non-significant direct relationship between Stress and Profit (hypothesis H7, was not confirmed). This further examination should test a potential indirect effect of Energy on Profit via Turnover, and maybe also via Transports. Similarly, the indirect relationship between Stress and Profit via Turnover and Transports should be tested in future studies.

Overall, the results of the presented study have shown that it is possible to make valid predictions regarding an employee's future performance based on that person's energy profile, at least in certain areas. In this regard, it was found that the energy level, as well as the stress level, assessed with the Electrophotonic Imaging Device, are valid predictors of employee's performance indicators such turnover and the number of transports generated by that person.

The relationship between the energy profile of an employee and his professional performance becomes clear. Based on the empirical examinations conducted in a large multi-national shipping company whose employees had their energy profile assessed on a monthly basis for more than a year, the present study indicates a clear connection between employees' professional performance and their energy profile.

References

Banfield, P., & Kay, R. (2012). *Introduction to Human Resource Management.* New York: Oxford University Press.

Bodanis, D. (2000). *E=mc²*. Haase & Søns Forlag. Coppenhagen. Denmark.

Cox, B., & Forshaw, J., 2009. *Why does E=MC2 (and why should we care?).* Boston, MA: Da Capo Press.

Diamantopoulos, A., & Siguaw, J.A. (2006). Formative versus Reflective Indicators in Organizational Measure Development: A Comparison and Empirical Illustration. *British Journal of Management*, 17(4): 263-282.

Fornell, C., & Larcker, D.F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1): 39-50.

Hair, J.F., Sarstedt, M., Pieper, T.M. and Ringle, C.M. (2012). Applications of partial least squares path modeling in management journals: a review of past practices and recommendations for future applications. *Long Range Planning*, 45(5): 320-340.

Hair, J.F., Hult, G.T.M., Ringle, C.M., & Sarstedt, M. (2014). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM).* Thousand Oaks: Sage.

Hunter, J.E., & Hunter, R.F. (1984). Validity and Utility of Alternative Predictors of Job Performance. *Psychological Bulletin*. 96(1), 72-98.

Hawking, SW. (2010). *The Grand Design.* London: Bantam Press.

Korotkov, KG. (2002). *Human Energy Field: study with GDV bioelectrography.* Fair Lawn, NJ: Backbone Publishing Co.

Korotkov, K., Orlov, D., & Velichko, E. (2010). *Development of standard procedure for analysis of natural environmental objects based on the EPC/GDV method.* Retrieved from http://www.bio-well.eu/gb/resources/Research.html?relPath=Scientific%20foundations.

Korotkov, K. (2014). *Energy Fields Electrophotonic Analysis in Humans and Nature.* Retrieved from http://gdvcamera.com/wp-content/uploads/2014/06/Electrophotonic_Analysis_cover.pdf.

Mohirta, I. (2013). *Sonoluminescent Psychology – A Project of Quantum Psychology*. Bucharest: Ars Docendi.

Ringle, C.M., Wende, S., & Becker, J.-M. (2015). SmartPLS 3. SmartPLS GmbH: Boenningstedt. Retrieved from http://www.smartpls.com.

Torp, A.M., Marosy, Z.I., & Purcarea, A.A. (2014). Quantum Physics & Human Resource Management – Defining the Field". *SEA - Practical Application of Science*, II, 3(5), 637-641.

Torp, A.M., Marosy, Z.I., & Purcarea, A.A. (2015). Mindfulness – may diminish stress and increase energy. *Network Intelligence Studies.* NIS 5, III(1), 69-73.

Torp, A., Mandrea, L., & Cipu, C. (2015). Electrophotonic Imaging – A Possible Predicting Factor for Academic Performance. *Energy Education Science and Technology Part A: Energy Science and Research* 2015, 33(6), 2825-2832

Torp, A., Bunea, A., & Cipu, C. (2016). Company Aikido – It Seems to be a Practical Method to Reduce Stress and Increase a Person's Energy. *SEA – Practical Application of Science*, IV, 1(10), 27-31.

Torp, A., Cipu, C., & Purcarea, A.A. (2016). A Workday – from an energy Point of View. Brătianu, C., Zbuchea, A., Pînzaru, F., Vătămănescu, E.-M., & Leon, R.D. (Eds.). *Strategica. Opportunities and risks in the contemporary business environment* (pp. 470-481). Bucharest: Tritonic.

Torp, A., & Cipu, C. (2016). A Workweek – From an energy Point of View. In Ciocoiu, N.C. (Ed.). *Proceedings of the 10th International Management Conference* (pp. 324-333). Retrieved from http://conferinta.management.ase.ro/archives/2016/PDF/4_2.pdf.