

# INTRINSIC AND EXTRINSIC MOTIVATION. AN INVESTIGATION OF PERFORMANCE CORRELATION ON STUDENTS

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*A series of research undertaken in the last decade have revealed some interesting aspects regarding the effects of different types of motivation on performance. Among the researchers who have shown interest in this field we can number: Richard Ryan, Edward Deci, Sam Glucksberg, Dan Ariely, Robert Eisenhower, Linda Shanock, analysts from London School of Economics, and others. Their findings suggest that extrinsic incentives may have a negative impact on overall performance, but a general agreement in this respect has not been reached.*

*In this paper we intend to shed some light upon the relationship between intrinsic and extrinsic motivation and performance. Experts define intrinsic motivation as being the execution of a task or activity because of the inherent satisfaction arising from it rather than due to some separate outcome. In contrast with intrinsic motivation, we speak of extrinsic motivation whenever an activity is done in order to attain some separable outcome.*

*With the purpose of contributing to the clarification of the links between concepts, we initiated and conducted an explanatory research. The research is based on the analysis of the relations between the results obtained by third year students and their predominant type of motivation. For this, we formulated and tested four work hypotheses using a combination of quantitative methods (investigation) and qualitative methods (focus group). After the validation of the questionnaires, the respondents were divided into four categories: intrinsically motivated, extrinsically motivated, both intrinsically and extrinsically motivated and unmotivated. To analyze the collected data, we made use of Excel and SPSS.*

*Some of the primary conclusions of the research are as follows: as the average increases, the percent of individuals having both extrinsic and intrinsic motivation is decreasing; the highest percentage of unmotivated students is concentrated in the highest average category; Female students tend to have better performance at university level. The research intends to be nearly a first step in the attempt to clarify the relationship between intrinsic (and extrinsic) motivation and performance. Further research is needed.*

*Keywords: intrinsic motivation, extrinsic motivation, performance, correlation.*

*JEL: M12, I23*

## **I. Introduction**

The concept of motivation has emerged around 1930 and it was long debated and studied in an attempt to identify what drives people to undertake a particular action. After decades of studies and research it can not be said that there is a unified theory of motivation. However, some characteristics of motivation are generally accepted.

A series of research undertaken in the last decade have revealed some interesting aspects regarding the effects of different types of motivation on performance. Among the researchers who have shown interest in this field we can number: Richard Ryan, Edward Deci, Sam Glucksberg, renowned economist Dan Ariely (together with his colleagues from Carnegie Mellon and the University of Chicago), analysts from London School of Economics, Robert Eisenhower, Linda Shanock and others (Pink: 2009). Their findings suggest that extrinsic incentives may have a negative impact on overall performance, but a general agreement in this respect has not been

reached. Although there is no clear answer yet on the effect of extrinsic incentives on creativity or in regards to the implications of intrinsic motivation on performance, many companies are building a new conception based on autonomy, mastery and purpose (Matei and Abrudan: 2010, 1137-1139).

In this paper we intend to shed some light upon the relationship between motivation and performance. With this purpose, we initiated and conducted an explanatory research. The research is based on the analysis of the relations between the results (performance) obtained by third year students and their predominant type of motivation (intrinsic and extrinsic motivation).

## **II. Intrinsic and extrinsic motivation - defining the concepts**

When an individual is motivated, he feels energized or inspired to act, whereas an unmotivated person feels no impetus to do so (Ryan and Deci: 2000, 54). Thus, it is clear that people have different amounts of motivation. In addition, human motivation can vary not only in level, but also in orientation and type of motivation. Some of the contemporary researches are based precisely on these peculiarities of motivation and intrinsic versus extrinsic motivation has never been more debated.

*Intrinsic motivation* is defined as being the execution of a task or activity because of the inherent satisfaction arising from it rather than due to some separate outcome. Intrinsic motivation reflects the natural propensity of people toward learning and assimilation. Despite this, theorists (Ryan and Deci: 2000, 56) have shown that this propensity appears to be expressed *only under specifiable conditions*.

In contrast with intrinsic motivation, we speak of *extrinsic motivation* whenever an activity is done in order to attain some separable outcome (Ryan and Deci: 2000, 60).

Experts Ryan and Deci (Ryan and Deci: 2000, 58) state that extrinsic rewards can decrease intrinsic motivation. Rewards linked to the completion of a task, threats, deadlines and directives undermine intrinsic motivation because individuals perceive them as behaviour control techniques. On the other hand, free choice and the opportunity for self-direction can increase intrinsic motivation because of the sense of autonomy linked to them. Yet, even extrinsic motivation can have a certain amount of autonomy. The degree of autonomy varies in extrinsic motivation and it can be a reflection of either external control or true self-regulation (Ryan and Deci: 2000, 59).

## **III. Research methodology**

In conducting the research, we considered the following work hypotheses:

- Individuals for whom the intrinsic motivation is prevailing have higher averages than those for whom extrinsic motivation is prevailing.
- Individuals having both extrinsic and intrinsic motivation are better performers than individuals with only one active type of motivation.
- Unmotivated individuals have the lowest averages.
- Intrinsic motivation is present in significant different proportions in women than in men.

To test the work hypothesis an explanatory research has been conducted. For this, quantitative methods were combined with qualitative methods so as to achieve the most significant results. Thus, we associated the investigation – which was the primary method of research – with the focus group to attain suggestions for data interpretation.

Within the investigation, a questionnaire was used as research tool. The questionnaire - which was adapted from that of Horst H. Siewert and Renate Siewert (Siewert H.H, Siewert R., 2000) – contains 31 closed questions and it is designed to measure extrinsic and intrinsic motivation. The questionnaire was applied to 37 third year Management students from The Faculty of Economics. Of the 37 questionnaires, 35 were validated and 2 were not taken into account.

To facilitate the interpretation of data collected, we organized three focus groups. The grouping of participants was based upon the results of the questionnaire, as follows:

- The first focus group gathered individuals with both extrinsic and intrinsic motivation (16 students);
- The second focus group brought together individuals with either intrinsic or extrinsic prevailing motivation (12 students);
- Unmotivated individuals participated in the third focus group (7 students).

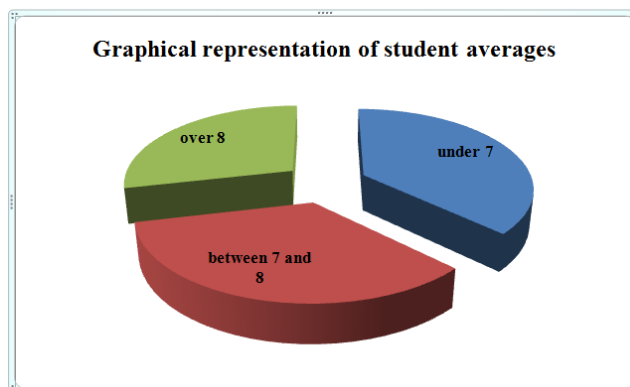
#### IV. Research findings

The sample consisted of 37 third year students who took part in the first phase of the research: the questionnaire. Subsequently, 35 questionnaires have been declared valid. Of these respondents, 37,1% were men and 62,9% women. The results of the questionnaire can be summarized as follows:

- 45,8% of respondents have both extrinsic and intrinsic motivation prevailing;
- 17,1% of respondents are intrinsically motivated;
- 17,1% of respondents are extrinsically motivated;
- 20% of respondents are unmotivated (neither extrinsic nor intrinsic motivation prevailing).

To analyze the relations between the prevailing type of motivation and performance we considered the average of each student for the first two years of university studies. The averages were divided into three categories so as to be roughly equal proportion:

- the first category: averages between 5 and 6,5;
- the second category: averages between 6,5 and 7,5;
- the third category: averages higher than 7,5.



**Exhibit 1. Graphical representation of student averages**

Source: own research

Further, we made use of the Crosstabulation function available in the SPSS software in order to get an idea on the possible relationships between motivation and averages (Exhibit 2). This reveals the following conclusions:

- 46,2% of students with averages lower than 6,5 have both extrinsic and intrinsic motivation prevailing; 23,1% of them are intrinsically motivated, while 15,4% are extrinsically motivated and 15,4% are unmotivated;

- 58,3% of students with averages between 6,5 and 7,5 are extrinsically, as well as intrinsically, motivated; only 8% are just intrinsically motivated, while equal proportions of 16,7% are extrinsically motivated, respectively unmotivated;

- in the case of *students with the highest average (over 7,5)*, a percentage of 30 are both extrinsically and intrinsically motivated, 20% are just extrinsically motivated, for 20% intrinsic motivation is prevailing, and the remaining 20% are unmotivated.

**Average\_1 \* Motivation Crosstabulation**

			Motivation				Total
			Neither EM nor IM	Just EM	Just IM	EM and IM	
Average_1 between 5 and 6,5	Count		2	2	3	6	13
	% within Average_1		15,4%	15,4%	23,1%	46,2%	100,0%
	% within Motivation		28,6%	33,3%	50,0%	37,5%	37,1%
	% of Total		5,7%	5,7%	8,6%	17,1%	37,1%
between 6,5 and 7,5	Count		2	2	1	7	12
	% within Average_1		16,7%	16,7%	8,3%	58,3%	100,0%
	% within Motivation		28,6%	33,3%	16,7%	43,8%	34,3%
	% of Total		5,7%	5,7%	2,9%	20,0%	34,3%
over 7,5	Count		3	2	2	3	10
	% within Average_1		30,0%	20,0%	20,0%	30,0%	100,0%
	% within Motivation		42,9%	33,3%	33,3%	18,8%	28,6%
	% of Total		8,6%	5,7%	5,7%	8,6%	28,6%
Total	Count		7	6	6	16	35
	% within Average_1		20,0%	17,1%	17,1%	45,7%	100,0%
	% within Motivation		100,0%	100,0%	100,0%	100,0%	100,0%
	% of Total		20,0%	17,1%	17,1%	45,7%	100,0%

**Exhibit 2. Crosstabulation between averages and the types of motivation prevailing**  
Source: own research

The findings are not encouraging as three of the work hypotheses are, evidently, not verified. Moreover, apparently as the average increases the percent of individuals having both extrinsic and intrinsic motivation is decreasing. Furthermore, it is worth mentioning that the highest percentage of unmotivated students (30%) is concentrated in the highest average category. Concluding, it seems *there is no correlation* between the two variables considered. The correlation coefficient is presented in Exhibit 3. The small value of the correlation coefficient (0,139) suggests *there is no significant relationship between motivation and performance (average)*.

	Average	Motivation
Average	1	
Motivation	0,1397454	1

**Exhibit 3 . Correlation between average and motivation**  
Source: own research

The first three hypotheses are not verified. Further, we focused on the forth hypothesis, which is: Intrinsic motivation is present in significant different proportions in women than in men. To verify this, we applied a Crosstabulation analyze on average and gender variables, we calculated Chi-Square and the correlation coefficient. The findings can be summarized as follows:

- The majority of students with the average lower than 7,5 are men (60%). 92,3% of male students fall into the category with the lowest average.
- 93,3% of the students with the highest average are women. 63,6% of female students are situated in the highest average category.

		Gender		Total
		Male	Female	
Average Under 7,5	Count	12	8	20
	% within Media	60,0%	40,0%	100,0%
	% within Gen	92,3%	36,4%	57,1%
Over 7,5	Count	1	14	15
	% within Media	6,7%	93,3%	100,0%
	% within Gen	7,7%	63,6%	42,9%
Total	Count	13	22	35
	% within Media	37,1%	62,9%	100,0%
	% within Gen	100,0%	100,0%	100,0%

**Exhibit 4. Crosstabulation between averages and gender**  
Source: own research

Based on these observations, as well as on the results of the Chi-Square Tests (Exhibit 4) and on the correlation coefficient calculated (Exhibit 5), we can state that *there exists a correlation between the two variables.*

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	10,443 <sup>a</sup>	1	.001		
Continuity Correction <sup>b</sup>	8,283	1	.004		
Likelihood Ratio	11,911	1	.001		
Fisher's Exact Test				.002	.001
Linear-by-Linear Association	10,145	1	.001		
N of Valid Cases	35				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 5,57.

b. Computed only for a 2x2 table

**Exhibit 5. Chi-Square Tests: Average and gender**  
Source: own research

Thus, female students tend to have better performance at university level.

	Average	Gender
Average	1	
Gender	0,403640948	1

**Exhibit 6. Correlation: Average and gender**  
Source: own research

In regards to the relationship between gender and motivation there are no significant differences between male students and female students. Yet, the percentage of men who are intrinsically motivated is higher than that of women.

## V. Conclusions

In order to draw the conclusions of the research conducted, we revisit the work hypotheses:

- Individuals for whom the intrinsic motivation is prevailing have higher averages than those for whom extrinsic motivation is prevailing. *Not verified*. There are equal percentages of intrinsically motivated students and extrinsically motivated students in the highest average category. Research at this level can not state that there is a correlation between intrinsic motivation and better performance.

- Individuals having both extrinsic and intrinsic motivation are better performers than individuals with only one active type of motivation. *Not verified*. It appears that, as the average increases, the percent of individuals having both extrinsic and intrinsic motivation is decreasing. Further research is needed.

- Unmotivated individuals have the lowest averages. *Not verified*. For the sample analyzed, the highest percentage of unmotivated students is concentrated in the highest average category.

- Intrinsic motivation is present in significant different proportions in women than in men. *Verified*. Female students tend to have better performance at university level.

The research conducted has, of course, limitations. The most important aspect worth mentioning is that there is no statistical representativeness for the population investigated. The research intends to be nearly a first step in the attempt to clarify the relationship between intrinsic (and extrinsic) motivation and performance.

## VI. Acknowledgments

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