

# WHAT MOTIVATES STUDENTS IN GRADUATE SCHOOL? AN EMPIRICAL STUDY

Niall Hegarty, St. John's University  
Robert Brasco, St. John's University  
Fang Lih Lu, St. John's University

## ABSTRACT

*Knowledge of motivation levels of students in programs is insightful information for educators. At the graduate level there exists an even greater need to understand the motivation behind the desire to pursue a master's degree. However, the lack of research on motivation of graduate students makes it difficult to develop a comprehensive understanding of this student population. This study employs the Academic Motivation Scale to measure the motivation of 70 graduate business students and 43 liberal arts students. Comparisons are made between the two student populations and recommendations are offered in the assessment of these student populations.*

**JEL:** I21, I23, M10.

**KEYWORDS:** Graduate Students, Intrinsic, Extrinsic, Academic Motivation Scale.

## INTRODUCTION

A few short years ago these authors embarked upon understanding graduate student motivation in an effort to better assist program developers to design programs which satisfy industry requirements. An initial discovery was that while there was limited information on graduate students in general, there was an even greater deficiency in the measurement of graduate student motivation. Although information was existent on undergraduate and adult learner populations there was a dearth of information directly related to graduate students. And while there exists a multitude of reasons for returning to graduate school, there was not concrete research that returned quantitative information describing the motivation of this population. Consequently, this research sought to simply measure the strength of motivation of students in graduate programs, and to identify predominant motivations as being either intrinsic or extrinsic in nature. It is hoped this research will advise educators and program developers on the motivational background of graduate students, and result in programs which cater to the learning goals of this population. This study therefore seeks to advance the literature and knowledge base pertaining to graduate student motivation through the application of the Academic Motivation Scale (AMS) as a measurement tool of motivation.

Insight into an individual's motivation provides us with an indication of his/her work ethic and commitment to completing an advanced degree. While it is generally accepted that a graduate degree takes two years to complete on a full time basis and three to four years on a part time basis, motivation then becomes a factor in sustaining an individual throughout the length of a program. In the absence of an instrument that specifically measures graduate student motivation, the Academic Motivation Scale (Vallerand et al, 1992) is an obvious selection as an appropriate measurement for this population. Developed to measure motivation levels of college students, the AMS has as its foundation the tenets of Self Determination Theory (Deci & Ryan, 1985) which identifies motivation as being either intrinsic or extrinsic. The existence of these forms of motivation is not dichotomous; that is, an individual is not either intrinsically motivated or extrinsically motivated, but rather can possess both in varying amounts depending upon the subject matter. The AMS evaluates the strength of each type of motivation present and therefore was chosen for this study for the detail it provides. It also builds upon the research of the

present author in examining the validity of the AMS as a viable instrument in the measurement of graduate student motivation.

Goals are often discussed in terms of motivation, however goal setting and motivation although connected do not necessarily have a causal relationship. One is not motivated simply because he has set goals. While goal setting is highly relevant for organizations and individuals as a method of maintaining focus, for an individual wishing to earn a master's degree setting a goal of earning such a degree may be a lot easier than maintaining the required motivation levels to complete a program. However, correctly setting challenging but achievable goals does have a positive impact on motivation (Latham, 2004). In examining this student population it is hoped to deliver a position on not only the strength of motivation in graduate students but also on the amount of motivation needed to successfully complete a graduate program. Essentially, we posit the query of whether motivation is necessary in completing a graduate degree or whether just a desire to do the work at an acceptable level will suffice in maintaining an individual's presence in a graduate program.

The literature extant on the AMS appears to be contingent upon scholarly interest in Self Determination Theory. While there appears to be continued interest in the discussion of intrinsic versus extrinsic motivation in terms of a preferred form of motivation the use of the AMS as measuring tool lags behind the aforementioned discussions. This may also be due to the lack of motivational studies which focus on graduate students. As many colleges and universities pride themselves on the caliber of their graduate programs it is highly advantageous to have additional information pertaining to the performance of this population. Consequently, it is the intention of this research to contribute to an area of motivational study that has not received an enormous amount of attention, and offer valuable information to assist graduate program administrators to better understand and cater to this student population.

The remainder of this paper is structured to firstly examine the available pertinent literature on the subject of student motivation as well as applications of the AMS instrument. The method in which the AMS is used in this study is then described as well as the statistical results obtained. A commentary discussion is offered as are limitations of the study. The authors then offer recommendations for improved teaching of this student population and well as future applications of the AMS instrument.

## REVIEW OF LITERATURE

While not designed specifically for a graduate population, the Academic Motivation Scale (AMS) is generally regarded as a versatile instrument which can be used across multiple populations. Developed in 1992 by Robert Vallerand, its original development was for use with undergraduate populations. However in selecting a tool specifically geared toward a graduate population it is a natural selection as it requires minimal, if any, word modifications. The AMS has recently been used by Smith, Davy, and Rosenberg (2010) in the assessment of graduate students and returned values consistent with the design of the instrument. Their study, however, predominantly looked at internal values of intrinsic and extrinsic motivation as opposed to an overall Self Determination Index which the AMS produces.

Research by Deci and Ryan (1985) on Self Determination Theory forms the basis from which the AMS is built. SDT posits motivations as being intrinsic, extrinsic, or amotivated. The AMS then builds upon this theory by assigning values to the strength of motivation in each area culminating in an overall SDI. An attractive feature of the AMS is that it breaks Intrinsic and extrinsic motivation into three subsets categories and together with amotivation returns an overall seven-factor approach to the measurement of motivation. Much research has concentrated on the study of the autonomy of these types of motivation (Ryan, Mims, & Koestner, 1983, Deci & Ryan, 2000; Gagne & Deci, 2005; Vansteenkiste, Lens, & Deci 2006) resulting in the acceptance that intrinsic and extrinsic motivation were not dichotomous.

Recent studies by Barkoukis et al (2008) and Brouse et al (2010) using the AMS have returned results consistent with the instrument's design. Other studies in the area of SDT have focused on intrinsic and extrinsic motivation in terms of their relationship to goals. Kasser and Ryan (1993) conducted research on associating specific goals as being either intrinsic (personal development) or extrinsic (wealth growth) to illustrate the connectedness of goals and motivation. The available research in this domain indicates that goal-setting, SDT, and AMS are themselves inherently related.

While there are numerous areas of concentration for study under the SDT umbrella there are still numerous measuring tools. Such tools as the Intrinsic Motivation Inventory (IMI) which looks at enjoyment levels experienced from various activities, and the Aspirations Index (AI) which looks at an individual's life goals, serve to illustrate the scope of SDT in examining motivation. The IMI has been used by McAuley, Duncan, and Tammen (1989) to examine personal motivation in sports while the AI has been utilized by Kasser and Ryan, (2001) to examine intrinsic and extrinsic motivation in setting and attaining life goals. The existence of these scales, and many others to examine motivation, underline the complexity of motivation and the need for population specific measuring tools. Hence the need for recognized measuring instruments in specific areas.

In the domain of educational motivation, which is the focus of this article, the Academic Motivation Scale continues to receive usage in various studies. One such recent study by Isiksal (2011) examined differences between Turkish and American university students. This research provided informative information on the differences in motivation between the two different cultures. The Turkish students exhibited greater intrinsic motivation, while the American student extrinsic motivation proved stronger. This illustrates the versatility of the instrument in assessing student motivation. The use of the AMS on undergraduate students has also returned useful information in terms of gender with females reporting higher levels of both intrinsic and extrinsic motivation (Brouse et al, 2010). The use of the AMS as the central topic of research however, is sparse enough that it will take significant time to validate it as an instrument which can be used across numerous academic disciplines.

Literature on motivation spans across a number of different realms including leadership, entrepreneurship, and employee motivation. While research by Raposo, do Paco, and Ferreira (2008) on entrepreneurial students offers excellent insights into student motivation it fails to use an established motivation instrument which would assist in establishing a benchmark tool in the measurement of motivation. Similarly, Carsrud and Brannback (2011) offer invaluable insight into motivation in entrepreneurs but do so without quantitative data to substantiate recommendations. While the AMS measures intrinsic and extrinsic motivation, an attractive feature of this instrument is that it also acknowledges the existence of amotivation where an individual believes their efforts, whether intrinsic or extrinsic, will not affect outcomes therefore lack any form of motivation (Vallerand et al, 1992).

To date use of the AMS on graduate samples is lacking, and therefore forms the core of this study with the intention of returning results for future researchers to build upon, and to also increase the knowledge base on graduate student motivation.

## **METHOD**

For this study, a sample of 70 business students and 43 liberal arts students was used. These students were enrolled in a large private metropolitan university in the northeast United States. The instrument chosen for the study, the AMS, was approved by the university's Institutional Review Board. This was made known to each course instructor upon request to visit classrooms.

No instrument exists to the knowledge of these researchers that is specifically designed for graduate student populations. Consequently, the AMS was the instrument chosen for this study. The AMS was

designed for undergraduate student populations and is gaining traction as a versatile instrument in the assessment of various university populations. Modifications to the instrument for use on this sample population was minimal to preserve the integrity of the instrument. The instrument entails 28 questions measured on a 7 point Likert type scale. These questions are based on an overall question of “*Why do you go to college?*”. The AMS facilitates the measurement of intrinsic and extrinsic motivation and breaks each category into sub-categories for detailed analysis of each type of motivation. Under intrinsic motivation, motivation to Know, Accomplish, and Stimulate are identified. In the extrinsic domain, External Regulation, Introjected Regulation, and Identified Regulation are identified as the sub categories. The scale returns an individual’s overall *Self Determination Index* (SDI) of motivation which ranges from -18 to 18. This SDI gives an overall indication of strength of motivation. Internal analysis in turn gives a better indication of the strength of an individual’s intrinsic or extrinsic motivation. Both sets of students were analyzed separately and collectively to provide for identification of any anomalies in each group. T-tests were performed to identify any differences between business and liberal arts students. Descriptive statistics and regression analysis were also used to explore any possible conclusions that may be drawn from the study. Additional descriptive information (age, work experience, etc) was gathered from individuals in an attempt to identify any possible trait indicators of motivation.

**RESULTS**

These researchers had as their goal the overall measurement and identification of graduate student motivation as being either intrinsic or extrinsic. The Academic motivation scale (AMS) was used and returned that graduate student motivation is predominantly extrinsic in nature. Simply put, graduate students pursue a graduate degree not with an inherent interest in subject matter but rather with an external motivation for earning the degree.

As can be seen in Table 1, the overall SDI mean for all students was 5.92 which is strikingly low considering the AMS scale has a range of -18 to 18. There were some differences however between business and liberal arts students. The business students overall SDI mean was 5.33 while the liberal arts students’ index was significantly higher at 8.93. Business students intrinsic mean was 4.30 and their extrinsic mean was 5.0 while the liberal arts students returned respective figures of 5.0 and 5.30 . Only ‘Intrinsic to Know’ showed any strength of correlation with the SDI (.82) in the intrinsic sub category while the extrinsic sub-categories displayed no correlation with the SDI

Table 1: Self Determination Index

Statistic	Score	Bin	Frequency
Mean	5.92	-8 < r < -6	1
Standard Error	0.38	-6 < r < -4	2
Median	6.83	-4 < r < 0	8
Mode	8.29	0 < r < 2	7
Standard Deviation	4.01	2 < r < 4	13
Sample Variance	16.07	4 < r < 6	18
Kurtosis	0.69	6 < r < 8	26
Skewness	-0.79	8 < r < 10	25
Range	20.83	10 < r < 12	9
Minimum	-7.25	12 < r < 14	4
Maximum	13.58	14 < r < 16	0
Sum	668.92	16 < r < 18	0
Count	113		

*This table displays descriptive statistics pertaining to the Self Determination Index. The mean score of 5.92 may not offer a proper assessment of this population due to a SD of 4.01. The median and mode provide insightful statistics in understanding this population in terms of motivation as measured by the Self Determination Index..*

The intrinsic mean for all students in the sample was 4.44 as opposed to the extrinsic mean which was 4.90. A t-test was conducted which indicated that this was a significant difference. A subsequent t-test

was performed on both samples which indicated that significant differences existed between intrinsic and extrinsic motivation in business students but not in liberal arts students. These results can be seen in Table 2.

Table 2: T-Test

		Intrinsic	Extrinsic	Signif.
Mean	overall	4.441	4.902	.000***
	bus	4.31	5.026	.000***
	lib	5	5.375	0.491
Intrinsic	Bus/Lib			0.209
Extrinsic	Bus/Lib			0.046**

*The purpose of this table is to show the significance difference between overall intrinsic and extrinsic means for all students. This significance difference is also reflected in the business student population. The table also highlights that while there is no significant difference in intrinsic motivation between business and liberal arts students there is a significant difference in extrinsic motivation between these two samples. \*\*\* p<.001. \*\* p<.05.*

When looking at overall motivation table 3 displays the array of results on the SDI plane. On the previously stated range of -18 to +18 with a value of 10 being the expected norm graduate students are clearly lacking in strength of any kind of motivation while pursuing a graduate degree.

Table 3: Self Determination Index

Bin	Frequency
-8 < r < -6	1
-6 < r < -4	2
-4 < r < 0	8
0 < r < 2	7
2 < r < 4	13
4 < r < 6	18
6 < r < 8	26
8 < r < 10	25
10 < r < 12	9
12 < r < 14	4
14 < r < 16	0
16 < r < 18	0

*This table displays the Self Determination Index frequency where Bin refers to the range of responses (r). These responses range from -18 to +18 on the Academic Motivation Scale. The large range illustrates the lack of homogeneity in graduate student populations. The high frequency of responses in the 6 < r < 8 and 8 < r < 10 bins suggests some possible conformity to the scale's average predicted return value of 10.*

In an effort to locate reasons why the SDI values returned from the AMS were so low, the researchers examined the additional demographic information collected on the population sample. Only U.S. born, English speaking, and work level exhibited strong Pearson r correlations with the SDI. As a result, Analysis of Variance was performed to examine for any differences between the SDI and the combined demographics. The results in table 4 show that there is no significant relationship between the overall demographics and the SDI.

The results of the statistical analysis indicate that liberal arts students are significantly more motivated, both intrinsically and extrinsically, than their business counterparts while, overall, graduate students exhibit more extrinsic than intrinsic motivation in their approach to the respective subject matter.

Table 4: Analysis of Variance

	df	SS	MS	F	Significance F
Regression	12	237.443	19.786	1.266	0.250
Residual	101	1562.504	15.625		
Total	113	1799.946			

*An ANOVA was conducted to test for a possible relationship between the Self Determination Index and population demographics. This table illustrates that the overall demographics of the sample do not have a significant relationship with the motivational Self Determination Index. Consequently, demographics are not a determining factor in individual motivation at the  $p > .05$ ,  $p > .01$ , and  $p > .001$  levels.*

## LIMITATIONS

Further research is required to accurately measure the graduate student population. While the results of this research are similar to previous research, further study on larger samples is required. Due to the very nature of graduate programs being smaller than undergraduate programs, large samples can prove difficult to obtain.

The AMS instrument, although validated at the undergraduate level, needs further use to achieve validation at the graduate level. However, early returns appear to be consistent and point to an obvious lack of motivation in graduate students regardless of the subject matter. This study only examined liberal arts and business students and did not consider the many other disciplines which offer graduate degrees. This study was deliberately kept uncomplicated so as to highlight the basic strength of motivation in graduate students. Subsequent research would necessitate internal demographic analysis for any observable differences. However, such research would not be expected to undermine the main observation of this study, that is, the lack of motivation, both intrinsic and extrinsic in graduate students.

As many graduate programs rely on standardized entry examinations such as the GRE and GMAT, it stands to reason that such programs therefore only attract individuals who can perform well on such tests. Also, as students earn letter grades in coursework, graduate programs therefore could possibly contain a high number of individuals who are performance oriented in achieving grades as opposed to being intrinsically motivated in mastering the subject matter. The location of the university where this study took place is also a limiting factor. Located in the northeast United States, conclusions can only be drawn pertaining to similar large urban private universities.

## DISCUSSION

The measurement of motivation in graduate school students is an important endeavor in terms of its value to educators, employers, and society. The lack of motivation in graduate school students is of concern. From an educational perspective it provides a great challenge to program developers looking to provide a quality education to students. Motivated students enhance the learning experience for all students and invigorate faculty to constantly provide learning challenges to students. Clearly, graduate faculty face an uphill battle in trying to motivate students in the learning process. Of subsequent concern is that assuming graduate students are pursuing advanced education in their chosen professional fields, their professional motivation is subsequently below what an employer would expect from someone seeking career advancement. This in turn translates into unmotivated employees who are underperforming. Ideally, society seeks to have maximum utilization of skills, and the ramification for society is that graduate programs are producing unmotivated mid level managers who are responsible for leading companies while returning mediocre results.

The Academic Motivation Scale has seen increased use as an instrument for measuring motivation at the graduate level, however an instrument designed for graduate school students is required to get an accurate

indication of the motivation levels of graduate students. To this end there is a void in the knowledge base pertaining to this population. Until an instrument designed for graduate students is developed and validated, all research on this population using the AMS, although insightful and directive, is still speculative.

## **RECOMMENDATIONS**

These researchers are of the opinion that research on graduate student motivation has far reaching implications. Graduate program development, and indeed graduate program admissions need to better identify motivated candidates who bring a desire for learning to the classroom. Furthermore, graduate faculty need to be aware of existing motivation levels inherent in graduate school students. While faculty may rightly assume graduate students are attending master degree programs to simply advance their careers, they may not however be aware of the dearth of motivation in students for the subject matter. While these researchers do not advocate a complete overhaul of graduate programs as this would be impractical, we do recommend faculty teach in a manner that is more engaging and strives to enlist graduate students as partners in their learning experience.

Further use of the AMS is also recommended to validate its use as a measuring tool at the graduate level. However, the design of a graduate student specific instrument would add to the existing body of knowledge in this area. Until such time, repetitive use of the AMS may suffice as a reliable indication of graduate student motivation. Indeed, the use of this instrument in both public and private institutions across different disciplines would provide a more accurate statistical evaluation of this student population.

## **CONCLUSION**

In this study we sought to advance the knowledge base extant on graduate school student motivation. Specifically, information was gathered on graduate business school and liberal arts students and the AMS was used to measure and compare intrinsic and extrinsic motivation between these two groups. This measuring tool compared these students' SDI index which is an overall measure of motivation. Descriptive statistics were analyzed while t tests and ANOVA were also conducted to examine for differences between these two samples. Overall, the AMS instrument returned results indicating that liberal arts students are more motivated overall than business students.

Motivation is an individual phenomenon in that it occurs in everyone but in a different way in each person. In studying this graduate population, these researchers sought to obtain a reading on the strength and type of graduate student motivation using the AMS. The use of an instrument not specifically designed for a population always presents challenges. However, continued use of the AMS with this population is an important building block in the measurement of graduate school students until such time as a population-specific tool is developed. Deliberately, the simplicity of the statistical analysis in this paper highlights the lack of motivation in graduate school students which presents challenges to both educational programs and the industries which employ them. With further research, programs and teaching methods can be developed to better enhance the learning experience of graduate students while also adding value to the industries where graduate students develop their careers.

As opposed to undergraduate students there is less homogeneity in graduate students which is a limiting factor in making generalizations about this population. Graduate students which are composed of full-time, part-time, and adult learners have greater course concentration in major courses than undergraduates. Consequently, while separate programs such as liberal arts, education, business, and pharmacy may enjoy greater homogeneity within their subjects this specializing focus of study makes generalizations about graduate students difficult to make.

The AMS is a versatile instrument due to the generic questions it contains which have applicability across numerous populations. Its widespread use with undergraduate samples has clearly established it as a preferred tool. As such, further use at the graduate level may establish its reliability and validity for a better understanding of graduate school population traits. Ideally the development of a tool specifically geared towards a graduate population which encompasses the ethos of the AMS may be a preferred long term solution in measuring motivation at the graduate level. Such a tool could also include cost factors which could affect motivations while attending graduate school.

## REFERENCES

- Barkousis, V., Tsorbatzoudis, H., Grouis, G., Sideridis, G. (2008). The assessment of intrinsic and extrinsic motivation and amotivation; validity and reliability of the Greek version of the Academic Motivation Scale. *Assessment in Education: Principles, Policies & Practice*, 15, 39-55.
- Brouse, H., Basch, C., LeBlanc, M., McKnight, K. (2010). College students academic motivation; Differences by gender, class, and source of payment, *College Quarterly*, 13,1.
- Carsrud, A., Brannback, M. (2011). Entrepreneurial motivations: What do we still need to know? *Journal of Small Business Management*, 49(1), 9-26.
- Deci, E., Ryan, R. (1985). *Intrinsic motivation and self-determination in human behavior*, New York :Plenum Press.
- Deci, E, Ryan, R. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68-78.
- Gagne, M., Deci, E., (2005). Self-determination theory, *Journal of Organizational Behavior*, 26, 331-362.
- Hilde, H., Hilde, J., Andreassen, C., Pallesen, S., Notelears, G. (2010). Leadership and fulfillment of the three basic psychological needs at work, *Career Development International*, 16(5), 507-523.
- Isiksal, M. (2010). A comparative study on undergraduate students' academic motivation and academic self-concept, *The Spanish journal of Psychology*, 13, 2, 572-585.
- Latham, g. (2004). The motivational benefits of goal setting, *Academy of Management Executive*, v18,n4, 126-129.
- McAuley, E., Duncan, T., & Tammen, V. V. (1989). Psychometric properties of the Intrinsic Motivation Inventory in a competitive sport setting: A confirmatory factor analysis. *Research Quarterly for Exercise and Sport*, 60, 48-58.
- Kasser, T., Ryan, R. M. (2001). Be careful what you wish for: Optimal functioning and the relative attainment of intrinsic and extrinsic goals. In P. Schmuck & K. Sheldon (Eds.) *Life goals and well-being*, Gottingen: Hogrefe.
- Kasser, T., Ryan, R. M. (1993). A dark side of the American dream: Correlates of financial success as a central life aspiration. *Journal of Personality and Social Psychology*, 65, 410-422.
- Ryan, R.M., Mims, V., & Koestner, R. (1983). Relation of reward contingency and interpersonal context to intrinsic motivation: a review and test using cognitive evaluation theory, *Journal of Personality and Social Psychology*, 45, 736-750.



Smith, K., Davy, J., Rosenberg, D. (2010). An examination of the validity of the Academic Motivation Scale with a United States Business Student Sample, *Psychological Reports*, 106,2, 323-341.

Vallerand, R., Pelletier, L., Blais, M., Briere, N., Senecal, C., Vallieres, E. (1992). The Academic Motivation Scale: A measure of intrinsic, extrinsic, and amotivation in education. *Educational and Psychological Measurement*, 52, 1003-1017.

Vansteenkiste, M., Lens, W., Deci, E. (2006). Intrinsic versus extrinsic goal contents in self-determination theory: Another look at the quality of academic motivation, *Educational Psychologist*, 41(1), 19-31.

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## **BIOGRAPHY**

Niall Hegarty is Assistant Professor of Management at St. John's University. He has also served as Assistant Dean and Associate Director of Academic Advisement at the university's Manhattan campus located in the heart of the financial district. He has published in journals such as *The Journal of Continuing Higher Education*, and the *Journal of Human Resources and Adult Learning*.  
[hegartyn@stjohns.edu](mailto:hegartyn@stjohns.edu)

Robert Brasco is Executive Director of The Professional Development Center & Graduate Internships at St. John's University's School of Education. He has published in journals such as the *School Administrator*. He can be contacted at [brascor@stjohns.edu](mailto:brascor@stjohns.edu)

Fang Lih Lu is Associate Professor, and department Chair, Computer Information Systems/Decision Sciences, at St. John's University. He has published in various journals such as *Operations Research*; *International Journal of Business, Marketing, and Decision Sciences*; *International Journal of Knowledge, Culture and Change Management*; and *Review of business*. He can be contacted at [luf@stjohns.edu](mailto:luf@stjohns.edu)