

The Role of Motivational Style, Self-esteem, Academic Stress, Gender and Student's Expectations in Predicting Academic Outcomes

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Abstract

This study examined the role of extrinsic and extrinsic motivation, stress, self-esteem, gender and students' expectations in predicting academic outcomes. Participants were DBS psychology freshman (N= 75: Male, N=149: Female). All participants completed intrinsic and extrinsic motivation questionnaire, academic stress scale, and self-esteem scale. In general, participants reported strong intrinsic motivation orientation than extrinsic motivation styles. However, Female students were significantly motivated in term of fear of failure ($t(222) = -4.81, p < .001$); authority expectations ($t(222) = -2.03, p = .043$); peer acceptance ($t(222) = -2.50, p = .013$). Results showed significant gender differences in stress ($t(222) = -2.680, p = .008$) significant difference in students' expectation in term of data analysis result ($t(201) = 12.906, p < .001$) and overall average result ($t(201) = 14.956, p < .001$).but no significant gender differences in self-esteem. In the first predictive model power motivation ($\beta = .204, p = .009$), self-esteem ($\beta = .181, p = .034$) positively influenced data analysis performance. Whereas authority expectation had negative significant correlation these results ($\beta = -.234, p = .007$). In the second model power motivation ($\beta = .186, p = .018$), academic stress ($\beta = .171, p = .045$) positively affected end of year overall average performance, but negative results were significantly associated with authority expectation ($\beta = -.216, p = .014$). Both models significantly explain data analysis results (*Adjusted R-sq.* = .078; $F(10, 182) = 2.62, p = .005$), and end of first year overall average results *Adjusted R-sq.* = .064; $F(10, 182) = 2.30, p = .014$).

The findings provide greater insight into the psychological factors influencing first year undergraduate psychology students' performance when entering university.

1. Introduction

Starting college or university is an important transition in the development of young adults. It opens for them new doors of success and opportunities (Tao, Dong, Pratt, Hunsberger, & Prancer, 2000) but also real life challenges, social pressure and uncertainties. However, many freshman students are inadequately prepared for this transition and find it hard to cope with the psychological, emotional, and academic realities of higher education, which directly affect their academic performance and college advancement (Francis, McDaniel, & Doyle, 1987). A plethora of empirical research suggest psychosocial factors (PSFs) such as self-efficacy, attitude toward learning, motivation, self-esteem, academic stress and locus of control are not only a significant predictor and mediator of future academic performance (Dymnicki, 2004; Kyllonen, Walters, & Kaufman, 2005; Lounsbury, Welsh, Gibson, & Sundstrom, 2005; Payton et al., 2008; Petersen, Louw and Dumont, 2009; Robbins et al., 2004 ; Robbins, Oh, Le, & Button, 2009), but also can add incremental validity to cognitive factors in predicting later students' performance (Grigorenko et al., 2009; Yen, Konold, & McDemott, 2004).

The aim of this study is to examine the role of psychosocial factors of both intrinsic motivation based on need of achievement and mastery goals, and extrinsic motivation based on peer acceptance, power motivation and fear of failure, self-esteem, academic stress, and their relationship with background variables such as gender and student performance expectations in predicting Dublin Business School undergraduate academic outcomes.

1.1 Motivation and Education

The concept of motivation has been studied from several perspectives (e.g., Freud, 1923/1962; Hull, 1943; Skinner, 1953). However, the resurging interest in motivational models and theories as a result of the important development of theoretical frameworks

concerning college student change (Pascarella & Terenzini 1991), become strongly evident by the recent use of goal theories and motivational dynamics such as self-regulation, self-determination and expectancy-value models of motivation in order to understand and explain students' performance, achievement and child development within the context of educational psychology (Covington, 1993, Dweck, 1999, Eccles & Wigfield, 2002).

1.2 Theories of Motivation

Researchers have yet to agree on the precise nature of motivation (Pintrich & Schunk, 1996). Early theorist often propounded the concept of motivation to describe human behaviour in general. However, the focus on motivation has largely shifted towards addressing behaviour in specific settings and contexts such as academic and educational context (Schunk, Pintrich, & Meece, 2008). Pintrich and Zusho (2007), define academic motivation as the internal processes that instigate and sustain activities aimed at achieving specific academic goals. Tucker, Zayco, & Herman, (2002) viewed motivation as “cognitive, emotional, and behavioural indicators of student investment in and attachment to education”.

Numerous studies that focused on the relationship between academic motivation and school performance in particular (e.g., Armitage, 2008; Boon, 2007; Kushman, Sieber, & Harold, 2000; McInerney & Van Etten, 2004; Martin, Marsh, Debus, & Malmberg, 2008) suggest that motivation is positively related with academic performance. In fact motivation is regarded as the most important factor that influences academic performance and success. According to Tucker et al., (2002) motivation is directly linked to academic performance and achievement; all other factors affect achievement only through their effect on motivation. This study will try to focus on the self-determination view of motivation and its effect on students' academic performance while expectancy value theory help explain the differences in actual and expected students' grade at the end of freshmen's first academic year.

1.2.1 Expectancy-Value Theory

The expectancy-value theory proposes a model of motivation where the person's beliefs can explain or predict educational choices, academic outcomes, effort and persistence (Eccles et al., 1983; Nagy et al., 2006). In this model, motivation influences the person to engage in a specific behaviour where the selected options yield the greatest reward. Vrooms theory posits that motivation is effected by two factors: the individual expectation of meeting a goal and the subjective value placed on that goal or task to attain achievement-related choices. In addition, expectancy consists of three key perceptions: (1) expectancy, (2) instrumentality, and (3) valence, and each perception represents a differing belief: (1) effort, (2) performance, and (3) reward. According to Nagy et al. (2006) task value can be divided into four categories: intrinsic value, attainment value, utility value, and cost. The intrinsic value is where the person's interest and enjoyment are derived from performing a task. The attainment value refers to how the individual assigns importance in order to complete a goal. In the utility value the focus is on the relationship between the goal and task. And finally, the cost value refers to the perceived negative outcomes of either participating or not participating in a task. Thus, motivation is guided by the person's appraisal of how important are these domains to achieve his or her target goals. For example, when a student joins an advanced statistic class which he or she is interested in (intrinsic value). And it is important for the student to attend every class of the program (attainment value) and by completing the program the student will enhance his or her chances in performing well in the final year exam (utility value). However, participating in such a class require the student to allocate extra time at the expense of his or her social life (cost value).

Although Vroom's Expectancy Theory of Motivation (1964) is commonly been considered in researched within business education and organizational settings. Some efforts have been made to apply these model principles to college student development, especially,

predicting academic performance and grades. For instance, Geiger & Cooper (1995) used a sample of 81 college students to measure valence perception as the attractiveness of high academic performance. They noted that valence was the best predictor of academic performance. In contrast, Wigfield and Eccles (2000) suggested that expectations for success and beliefs about students' were a better predictor of math grades than achievement values. Also Malloch and Michael (1981) and Moore and Davis (1984) found expectancy but not valence to be positively linked to academic performance. Further, Brooks and Betz (1990) used Vroom's model on a sample of 188 undergraduate students to predict their occupational choice. They found that the interaction of expectancy and valence for an occupation explain between 12 to 41 % of the variance in student's occupational choice.

1.2.2 Self-determination theory

Since McClelland et al., (1953) and McClelland, (1961) proposed their theoretical concept of motivation, many theories were developed to explain how motivation affect, influence and guide people behaviour in general and students' academic success and performance in particular (e.g. Ames & Archer, 1988; Middleton & Midgley, 1997; Pintrich & Schunk, 1996; Eccles et al., 1983; Wigfield & Eccles, 2000). However, one of the most influential perspective of motivation which have been extensively studied by various researchers to investigate academic performance and achievement, is Deci and Ryan (1985, 1991) self-determination theory of motivation (SDT) (see Niemiec & Ryan, 2009; Ryan & Deci, 2009; Ryan & Weinstein, 2009). The self-determination theory is an approach that encompasses human motivation, social development, personality and general psychological functioning (Ryan & Deci, 2000). Perhaps, what makes SDT interesting for researchers within the educational context is the macro perspective of STD that assemble factors of human motivation, emotion and development in five inter-related mini-theories such as cognitive evaluation theory, goal contents theory, causality orientations theory, organismic

integration theory, and basic needs theory (see Deci & Ryan, 2002). Cognitive evaluation theory focus on the external factor of social contextual events and its effects on behaviour, intrinsic motivation and experience (e.g., competition, deadlines, rewards) on intrinsic motivation, behaviour, and experience (Deci & Ryan, 1985). Goal contents theory explains the impact of intrinsic and extrinsic goals on human motivation and wellness (Kasser & Ryan, 1996), causality orientations theory, aim to explain the interrelatedness between individual differences their motivational orientation and how they incorporate social influences into their motivational styles (Deci & Ryan, 2002). Organismic integration theory focus on the concept of internalization patterns concerning the development of extrinsic motivation. Thus, this process can explain the transformation from externally regulated behaviours to self-regulated behaviours (Deci & Ryan, 2002). Finally, basic needs theory that propose a specific set of universal basic psychological needs that are essential elements for human beings' optimal development, functioning and social wellbeing (Deci & Ryan, 2002).

1.2.3 Motivation styles

Unlike other theories, SDT suggests that viewing motivation as multidimensional in nature will allow researchers and practitioners alike to explain a considerable range of human behaviours and experiences. It can identify those antecedents that influence the multiple types of motivation and its outcomes (Levesque, et al, 2011). According to SDT the persons' behaviour can be either intrinsically or extrinsically motivated or amotivated along the self-determination continuum (see Figure 1). Intrinsic motivation refers to the persons' inherent motive to perform a task solely for the experience of pleasure and satisfaction while engaging in a specific behaviour (i.e., learning). In contrast to extrinsic motivation where the individual perform a task as a means to an end, activities are motivated for instrumental reasons to gain tangible rewards rather than inner motives and drives. Amotivation has the lowest level of autonomy and is characterized by the lack of intention to act, not to act or acting with intent.

Therefore, amotivated students are more likely to not perceive contingencies between their actions and its consequences (Vallerand et al., 1992). But, when the person progress from amotivation to intrinsic motivation along the self-determination continuum, the different profiles of motivation are related with increasingly positive developmental outcomes of the individual identity (Deci & Ryan, 2000).

The self-determination continuum as adapted from Deci & Ryan, 2002; Ryan & Deci, 2009

Figure 1

Amotivation	Extrinsic Motivation			Intrinsic Motivation	
Lack of Regulation	External	Introjected Regulation	Identified Regulation	Integrated Regulation	Intrinsic Regulation
Lack of motivation	Controlled Motivation			Autonomous Motivation	

Vallerand and his colleagues (Vallerand, Blais, Briere, & Pelletier, 1989; Vallerand et al., 1992, 1993) suggest that intrinsic motivation can be divided to three categories: Intrinsic motivation to know, intrinsic motivation to accomplish, and intrinsic motivation to experience stimulation. Intrinsic motivation to know refers to the inner desire to perform a task for the enjoyment and satisfaction one can derive from exploring, understanding, and learning new things. Intrinsic motivation to accomplish things refers to the desire to perform an activity for the pleasure and gratification obtained from accomplishing or creating new things. Finally, intrinsic motivation to experience stimulation refers to the inner motive to

engage in an activity in order to feel sensory satisfaction as well as enjoying aesthetic experiences. (Deci, Vallerand, Pelletire, & Ryan 1991; Ryan & Deci, 2000). Furthermore, self-determination theory divide extrinsic motivation into four types of extrinsically motivated behaviour ranking from lower to higher levels of self-determination: external regulation, introjected regulation, identified regulation, and integrated regulation. External regulation refers to behaviours that are regulated through external means such as rewards, pressures, obligations and controls (Ryan & Deci, 2009). External regulated behaviours are mainly triggered by specific external contingencies. However, when these external contingencies become absent it is more likely that the individual will lose persistence or even retired from the activity when the task becomes more difficult (Levesque et al., 2011).

Introjected regulation is characterised by a low degree of self-determination where behaviours are partially controlled by the external environment and part is regulated by an individual internal reward/punishment contingencies (Deci & Ryan, 1995). Identified regulation refers to behaviours that are performed by individuals' choice and free will because they are important to them. Thus, this type of regulation has more self determination to it than the previous one and is relatively autonomous from extrinsic motivation. Integrated regulation is viewed as developmentally advanced type of extrinsic motivation. Behaviours that are regulated through integration are in harmony with other aspects of students' values and identity (Deci & Ryan, 2002). However, despite the high level of autonomy and freedom that integrated behaviours have, they still part of extrinsic motivation. Because behaviours that are influenced by integrated regulation have some external value and consequences that are separate from the behaviour itself. Moreover, Vallerand et al., (1992) noted that integrated regulation had a weak correlation with educational activities and could not be distinguished from identified regulation. Therefore, integrated regulation can be seen as identified regulation. Finally, amotivation, which is not acting at all or acting without intent,

lacks autonomous and controlled regulation. Students who fall in this category may not perceive contingencies between consequences and their own actions (Vallerand et al., 1992).

Research studies show that intrinsic motivation has a positive effect on academic performance (Deci et al., 1991). Students with autonomous motivation towards academic activities achieve better grades than those who had less self-determined motivation (Deci et al., 1991). They have higher academic achievement (Soenens & Vansteenkiste, 2005) they have more enjoyment of academic work (Vallerand et al., 1989), and higher perceived academic competence (Fortier, Vallerand, & Guay, 1995). In contrast, extrinsic motivation is linked to higher levels of anxiety, low ability to cope with difficulties, poor academic performance and is more likely to dropout from school (Deci & Ryan, 2000; Fortier, Vallerand, & Guay, 1995). Mitchell (1992) investigated the relationship between intrinsic and extrinsic motivation, and self-assessment of motivation. He noted distinguishable patterns in behaviour between both intrinsic and extrinsic motivation. In terms of self-assessment of motivational strength intrinsic and extrinsic motivation were both respectively positively and negatively related with it. Moreover, the study concluded that extrinsic motivation predicted poor performance and course grades while intrinsic motivation was associated with good academic outcomes.

Fortier, Vallerand, & Guay, (1995) used a structural equation modelling to test a motivational model of school performance based on self-determination theory (see Figure 2). They found that students' perceived academic competence and perceived academic self-determination positively influenced autonomous academic motivation, which in turn has a direct positive affect on course grades. In fact their proposed model explains 28% of the variance in students' academic performance.

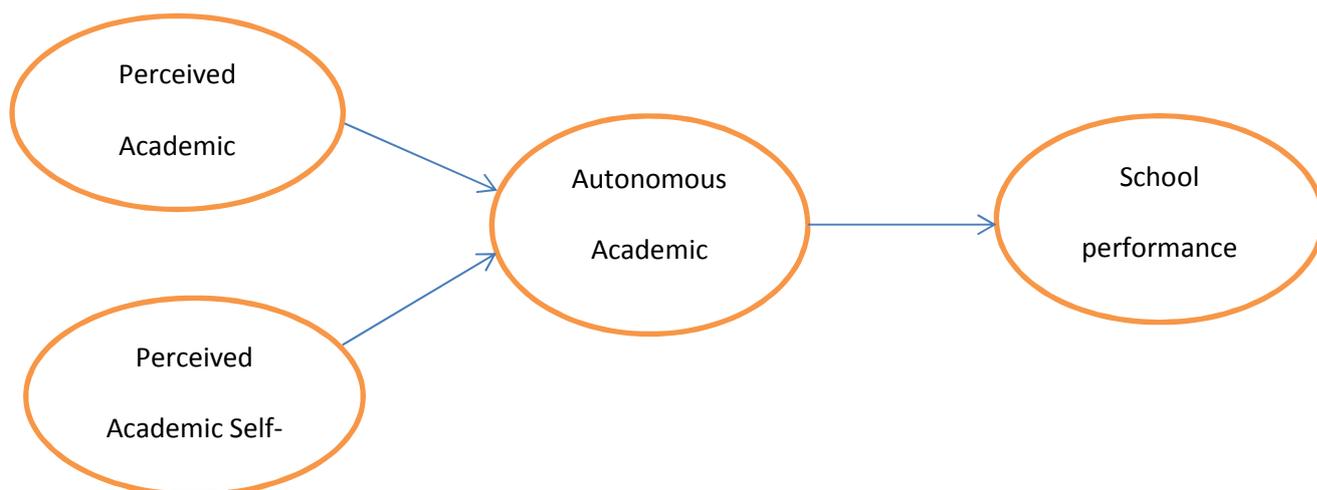


Figure 2

Motivational model of school performance as adapted from Mitchell et al, 1995.

Based on Deci, and Ryan (1985) SDT, Shia (1998) suggest that intrinsic motivation are made up of two factors: mastery orientation and the need for achievement. Furthermore, (Shia, 1998) argued that extraneous incentives or factors such as authority expectations including family and lecturers expectation, peer acceptance, power motivations where students feel the need to control environment by proving competence to others, and fear of failure that adapt inhibitory and avoidant approaches to situations, are found to decrease and influence student intrinsic motivation.

1.3 Gender, motivation and academic performance

Research findings with respect to sex differences in students' academic motivation are somewhat inconsistent. Some studies have found females in higher education significantly achieved higher rates of performance and academic success than their male counterparts (Brouse et al., 2010; Vallerand & Bissonnette, 1992; Vallerand et al., 1992; Wintre & Yaffe, 2000). Garvin and Martin, (1999) found that boys are significantly lower than girls in persistence, self-regulation, cognitive engagement, mastery orientation, and planning and

management, whereas others found that males had a significant level of achievement in comparison to females students in higher education (Adsul & Kamble, 2008; Fortes, Rodrigues, & Tchanchane, 2010), and in secondary education (Rutter, Smith, & Hall, 2005). Boggiano, Main, and Katz (1991) measured potential gender differences in motivational Orientation in six grade students using Harter's (1980, 1981) children's Self Report Scale of Intrinsic versus Extrinsic Motivation. They found that females were significantly more extrinsically motivated than males. According to Schiefele, Krapp, and Winteler (1992) male students' performance accords their interest level more than female students. Specifically, female students' academic performance is less related with their interests than is the case for male students' academic performance. Other research that look at performance at specific domains in education found that females have a significant level of performance in some fields such as nutrition and dietetics (Keller, Crouse, & Trusheim, 1993; Schram, 1996) and statistics (Busch, 1995), but had poor performance in other disciplines of higher education such economics and electrical engineering courses when compared with their male counterparts (e.g. Keller, Crouse, & Trusheim, 1993; Sid & Lindgren, 1981). In addition, Martin and colleagues (e.g. Martin & Debus, 1998, Garvin & Martin, 1999) found that boys are higher in self-concept in some academic domains, lower in anxiety and have more adaptive academic and social coping skills in some domains than their females counterparts. However, other studies suggest that there are no significant sex difference in performance and achievement motivation of college or university students (Lindgren, 1976; Pandey & Ahmad, 2007). The aim of this study is to examine the link between motivational styles gender and academic performance.

1.4 Stress and academic performance

Numerous studies on stress and its consequences acknowledge the important role it plays in college student adjustment and well-being (Chang & Rand, 2000; Gall et al., 2000;

Mallinckrodt, 1988). Stress is consistently linked to students' performance (De Meuse, 1985; Garrity & Ries, 1985; Harris, 1973; Isakson & Jarvis, 1999; Murff, 2005). Although an optimal level of stress can enhance learning ability (Kaplan & Sadock, 2000), excessive level of stress can cause physical and mental health problems (Niemi & Vainiomaki, 1999). Struthers, Perry & Menec, (2000) examined the relationship between stress, student academic performance and coping style. The result indicate a that academic stress is inversely related to academic performance. Similar findings were noted in a study that explored the role of emotional and social factors to predict academic success (Pritchard and Wilson 2003). Stress was also found to have a negative effect on students' persistence levels (Perrine, 1999; Zhang & RiChard, 1998) especially in older non-traditional students (Chartrand, 1992). Stress reduces students' self-esteem (Bressler & Bressler, 2007; Linn & Zeppa, 1984) and increase fear of failure (Hardy, 2003). Other research suggest that external stressors such as working hours and finance (e.g. tuition fees) affect academic performance and retention (Hey, Calderon, & Seabert, 2003) Furthermore, Hatcher et al., (1991) argue that academic situational constraints such as job responsibilities, joining a fraternity or being in a relationship increase a student's work load, cause stress, and constrain academic performance and development.

Other studies suggested a significant difference between stress and academic performance among female students (Hudd et al., 2000; Misra & McKean, 2000), traditional undergraduates (Pritchard and Wilson, 2003), freshman in particular (Struthers, Perry, and Menec, 2000), inner-city high school students (Gillock and Reyes, 1999), and for immigrant college students (Buddington, 2002). Gender differences also influence a student's perception and reaction to academic stressors (Misra et al., 2000). For example, female students more often report letting out their feelings, whereas men more often report controlling their emotions, facing the problem, ignoring the aversive situation, and engaging in problem-

solving efforts (Hyde & Plant, 1995). The scope of this study is to examine the effect of stress on student performance as well as academic stress and gender differences.

1.5 Self-esteem and academic performance

Although Self-esteem has been continually one of the most commonly research concept in social psychology (Baumeister, 1993), a large part of our society (i.e. teachers, politicians, parents etc..) hold many misconception about this construct to the extent that its significance is exaggerated where low self-esteem is viewed as the cause of all evil and high self-esteem as the cause of all good (Manning, Bear & Minke, 2006). However, Rosenberg (1995) believed that the general concept of self-esteem stems from the idea that “Every society or group has its standard of excellence, and it is within the framework of these particular standards that self-evaluation occurs”. Thus, Self-esteem is “the individual’s positive or negative attitude toward the self as a totality” (Rosenberg, Schooler, Schoenbach & Rosenberg, 1995). And it has to be viewed within the social and cultural context of the individual (Rosenberg’s 1979). It is important to note that self-esteem as a construct is not a valid measure for how a person is clever or attractive it is mainly the persons’ own perceptions and own subjective thinking (Baumeister, Campbell, Krueger, & Vohs, 2003). According to Rosenberg et al., the core aspects of self-esteem are the self-acceptance and self-respect that the individual hold against himself, which represent the necessary resources for positive psychological adjustment to stressful life transitions (Aspinwall & Taylor, 1992; Coffman & Gilligan, 2002-2003). These, will in turn facilitate the resilient behaviour of individuals with high levels of self-esteem during stressful life transitions (Aspinwall & Taylor, 1992).

Research suggests that people with high levels of self-esteem will more likely perceive themselves as well capable to engage in certain tasks using effective cognitive and

coping strategies to manage their personal resources in successfully completing those tasks (e.g. Chemers, Hu & Garcia, 2001; Coffman & Gilligan, 2002-2003; Ochse, 2001; Rosenberg et al., 1995). High self-esteem help students to consider themselves as active and capable persons to promote positive changes through effort and set higher goals to achieve, which in turn enhance learning and social interactions. Evidence suggests that improving student self-esteem will ultimately have a positive impact on their academic performance, achievement, social and personal responsibility (Redenbach, 1991; Rubie et al., 2004).

A number of research within the educational context suggest social and academic factors such as psychological well-being and academic outcomes and performance are positively related to self-esteem (e.g. Chemers et al., 2001; Rosenberg et al., 1995).

Grant-Vallone et al., (2003, 2004) noted that students who scored high on self-esteem showed better social and academic adjustment when they examined key factors that influence social, academic adjustment and institutional commitment/attachment of students from disadvantage background. However, some researchers argued relying on correlation studies to explain the positive relationship between self-esteem and social and academic factors may fail to give a clear picture about whether self-esteem is a predictor or a symptom of academic experiences and social difficulties Crocker & Luhtanen, 2003; Grant-Vallone et al., 2003-2004; Rosenberg et al., 1995). Further, research have yield inconsistent findings of the relation between academic performance and self-esteem. Some studies have shown self-esteem to have a positive effect on academic performance (e.g. Boulter, 2002; Chemers et al., 2001; Redenbach, 1991; Rosenberg et al., 1995; Vallone et al., 2003-2004). Whereas, other studies have shown the mediating effect of self-esteem on academic performance by extraneous variables (e.g. Aspinwall & Taylor, 1992). Perhaps the mediating effect of self-esteem might coincide with high levels of confidence to influence academic outcomes. According to Goldfinch and Hughes (2007) freshmen often tend to report high levels of

performance expectations and academic abilities. They start their university experience with high confidence in their key skills, particularly in research and writing. This in turn might result in either overestimating their skill set, or underestimating the demands within a university course (Levy & Murray, 2005).

Boulter (2002) investigated the role of a multi-dimensional measure of self-esteem on academic performance among freshman. The findings suggest that only the aspect of self-perception was a positive predictor of academic performance. Giving the self-comparison nature of self-esteem individuals judge and evaluate themselves by comparing themselves to other individuals, groups and/or social categories in their environment (Petersen, 2006). Thus, self-esteem tends to suffer when individuals compare themselves unfavourably to their social group. However, High levels of self-esteem topped with optimism might help students improve their coping strategies, college adjustment and lessens their perceived stress (Aspinwall & Taylor, 1992; Grant-Vallone et al., 2003). Associating self-esteem with optimism will increase students' interest in the course and their belief in their abilities which in turn improve academic outcomes (Fraser & Killen, 2005). This research will look in the relationship between self-esteem and student performance and any gender differences in relation to this construct.

1.6 Gender and academic performance

Historical evidence suggests that academic performance can be affected by many factors such as individual and background characteristics including student motivation, ability, and prior education. However, Feingold (1988) suggest that Gender can be a significant factor in predicting academic performance. Gender biological differences, childhood training and learning experience, parents and teacher expectations and behaviors can influence gender disparity among students which in turn affect their academic outcomes.

Lynn and colleagues (e.g. Lynn, 1998a, 1998b, 1999; Allik, Must and Lynn, 1999; Colom and Lynn, 2004) suggest that giving the biological differences between the two sexes, males are more expected to have higher average IQs than females. Young and Fisler (2000) investigated gender differences in academic performance in a sample of senior high school student found that males had better grades than females. However, most of their male participants were from advantageous background and families with high socioeconomic status. In contrast the majority of female students had a diverse background profile including families with low income status.

Vollmer (1986) examined gender differences in student expectations found that male student expect better grades on university exams than females. According to Forbes, (1987) girls had lower success rates in high school final examinations especially in the areas of science and mathematics. However, Stage and Kloosterman (1995) argued despite the continuous discrepancy in math performance between sexes at the high school level, such differences appear to be declining. Work by Eccles, Lord, Roeser, Barber, and Jozefowicz (1997) found that gender differences in high school enrolment in science subjects such as mathematics are mediated by gender differences in expectations for success and perceived value of competence in science subjects and math in particular. These differences maybe explain in the greater confidence in ability that men have over girls to undertake mathematically oriented work (Pajares, 1996).

The difference between gender and self-esteem might affect academic outcomes. Jacob, (2002) found females with higher self-esteem are more likely to achieve higher grades and performance than their males counterparts. In contrast, Kara and Kahraman (2008) found high self-esteem was a significant predictor for male student's performance. However, research on student motivation suggests that academic motivation may be the cause of the difference in academic achievement. Tella (2007) argued that gender differences in self-

esteem might influence students' performance, but the differences in academic outcomes can be rooted from their motivation instead of their self-esteem. These findings were consistent with the idea that Self-esteem is a necessary component that helps to produce achievement (Kohn, 1994, Naderi et al., 2009). In addition, motivational properties of self-esteem effect student academic performance and their functional responses to failure (Baumeister et al., 2003; Di Paula & Campbell, 2002). Despite many studies emphasized gender differences in self-esteem and how it might affect performance, a more recent research looked at the effect self-esteem of more than 7000 individuals from different range of age (14 to 30) and ethnical background. Erol and Orth (2011) reported no significant gender differences in self-esteem in youth and early adulthood. It is rather the understanding the factors involve in self-esteem development and its trajectory that is important to pinpointing and timing interventions that could improve people's self-esteem.

More recent evidence concerning gender differences in educational outcomes is pointing towards new emerging trends and patterns. Growing number of research are claiming that females are not only catching up to their males counterparts in term of academic achievement but they have overtaken men in many educational domains and disciplines (Goldin, Katz, and Kuziemko, 2006). According to the Organization for Economic Cooperation and Development (OECD, 2008) women have greatly outnumber men among recent college graduates in most industrialized countries. Females in high schools are increasingly scoring better grades than males (Lai, 2010; Machin and McNally 2005), as well as in colleges and universities (Baker, 2003; Chee, Pino, & Smith, 2005). Using three decades of data (1980s to 2000s) from the "Monitoring the Future" cross-sectional surveys, Fortin, Oreopoulos, & Phipps (2011), found that girls' high school GPA has moved from "B" to "A", whereas boy's GPA remain static at "B". They noted that girl's post-secondary expectation for achievement was the most significant contributing factor for

this trend. Different researchers have explained the reasons why female college/university students outperform their male counterparts is that females are more willing to consistently work hard and put more effort in their studies (Woodfield, Jessop, & McMillan, 2006). They have higher academic ethics and integrity (Chee, Pino, & Smith, 2005), they work more conscientiously (Wilberg & Lynn, 1999) and more likely to adhere to study schedules and task deadlines (Hofman & van den Berg, 2000). They are intrinsically motivated and display strong engagement to their academic goals and activities (Baker, 2003; Wintre & Yaffe, 2000). On the other hand male achievers are more likely to have better course taking behaviors, more classroom experiences, and cognitive processing strategies compared to their female counterparts (Byrnes, Hong, & Xing, 1997; Young & Fisler, 2000).

Although numerous studies have highlighted gender differences in academic expectations performance, and achievements, many researches have yield conflicting results (Bridgeman & Wendler, 1991; Keller, Crouse, & Trusheim, 1993). For instance, Mackintosh (1998) report that there is no sex difference in general intelligence. He suggested that general intelligence should be viewed as reasoning ability and that the best measure of this is the Progressive Matrices. Bridgeman & Wendler, (1991) claim that there is no relationship between gender and overall academic achievement. Veldman (1968) examined a sample of 1358 males and 957 females' undergraduate college students. He concluded that there was no significant difference between gender and students grades. Similar findings were also reported in higher education institutions across many cultures (Afuwape and Oludipe 2008; Ajiboye and Tella 2006; Chee, Pino, & Smith, 2005; Naderi et al., 2009; Peiperl & Traveyan, 1997). The current study examines gender differences in relation to their academic performance based on freshman's first year data analysis and computing grades and end of first year overall average results.

1.7 Rational and research hypothesis

Building effective models that predict students' performance in class, can help develop sound pedagogical and instructional interventions that are based on concrete foundation to achieve a better learning outcomes, while taking in consideration students individual differences, their diverse academic backgrounds and different performance in relevant courses (Etkina, Mestre, & O'Donnell, 2005).

Although psychosocial factors were found to be significant predictors of academic performance (Robbins et al., 2004; Robbins, Oh, Le, & Button, 2009; , Petersen, Louw & Dumont, 2009). The complex relationship between psychosocial factors and academic performance are yet to be fully understood (Robbins et al., 2004) such as how do psychosocial factors interact and affect gender in relation to academic performance, and what are the variables that explain the majority of the variance in academic performance among DBS first year undergraduate students?

This study is designed to test the following hypotheses at the .05 level:

Hypotheses 1: the study predicts a significant difference between genders in motivational styles. Females will have intrinsic motivational orientations, whereas males will be extrinsically motivated.

Hypothesis 2: student with high intrinsic motivation will achieve higher academic grades. Furthermore, students who are extrinsically motivated will achieve lower academic grades.

Hypothesis 3: the study predicts no significant gender differences in self-esteem.

Hypotheses 4: self-esteem will have weak correlation with student's grades.

Hypothesis 5: females will report higher level of stress than their male's counterparts.

Hypotheses 6: the study predict that academic stress will significantly affect students grades

Hypothesis 7: There will be no significant gender differences in academic performance.

Hypotheses 8: there will be a significant difference between students expected performance and their actual performance.

2. Method

2.1 Participants and Procedure

The participants (n = 224) were Dublin Business School full-time undergraduate students studying psychology. All participants completed the questionnaire in a computer laboratory within the university. The study was ethical approved by the research panel of Arts Lecturers. All anonymity of participant was assured.

2.2 Design

This study was designed as an exploratory correlational study. Two indicator of academic success were used as Criterion variables: end of first year data analysis result and end of first year overall average result. The predictor variables are:

1. Motivational styles (extrinsic and intrinsic motivation) were measured by Intrinsic and Extrinsic Motivation Questionnaire (Shia, 1998).
2. Perceived academic stress was measured by Academic Stress Scale (Agolla & Ongori, 2009).
3. Self-esteem was measured by The Rosenberg Self-Esteem Scale (RSE) (Rosenberg, 1965).
4. Gender

The nature of the study required the use of descriptive, comparative, and correlational research methods

2.3 Outcome Measures

Information regarding students' gender, and their performance expectation were collected during the survey.

Intrinsic and Extrinsic Motivation Questionnaire (Shia, 1998)

This 7-point likert style 60-item self-report questionnaire consist of two intrinsic and four extrinsic factors, where participants were asked to choose a response that best described them from strongly disagree to strongly agree. The intrinsic motivational factors entail the mastery goals (10 items) and the need for achievement (10 items) associated with completing academic tasks. In contrast, the extrinsic motivational factors are results of external pressure in relation to power motivation (10 items) fear of failure (10 items), authority expectations (9 items) and peer acceptance (11 items). Each set of items associated with the respective factor are summed, after reversed scoring of relevant items, with higher scores indicating greater levels of that type of intrinsic or extrinsic motivation. Good internal consistency reliability and construct validity have been reported for the questionnaire (Shia, 1998).

Academic Stress Scale (Agolla & Ongori, 2009)

This 5-point (strongly disagree to strongly agree) likert style 13-items self-report scale consist of items related to student academic stressors including poor performance, workload, poor facilities, competition, job after graduation and parental expectations. All the items on the scale are summed, with higher scores indicating greater levels of academic stress. Good internal consistency reliability ($\alpha = .81$) and content validity have been reported for the scale (Agolla & Ongori, 2009).

Self-Esteem Scale (RSE) (Rosenberg, 1965)

The Rosenberg Self-Esteem Scale (RSE) (Rosenberg, 1965) was used as a measure of global self-esteem. Participants rated their self-esteem on a 4-point Likert scale ranging from strongly agree to strongly disagree. The 10-item scale included statements such as "On the

whole, I am satisfied with myself” and “I feel that I have a number of good qualities.” The scale’s internal consistency was high, $\alpha = .89$.

3. Results and analysis

Participant ages ranged from 17 to 56, with a mean age of 25.04 (SD=8.11). Initially there were 224 applicants. However, actual data analysis results and end of year results were collected only from 202 participants. The research findings were provided in two sections of descriptive findings and inferential findings. Descriptive indicators of the research included mean, standard deviation of all variables are presented in Table 1

3.1 Gender and motivation style

To determine if there were any significant gender differences in intrinsic and extrinsic motivation, an Independent -test was conducted. The sample data file was split by gender so that any analysis of males and females could be carried out separately. The results did not support the first hypothesis. Although males had a higher level of need of achievement (mean = 49.09, SD = 6.44) and lower level of mastery goals (mean = 52.58, SD = 6.82) in comparison with their females counterparts (mean = 48.82, SD = 6.00) and (mean = 52.81, SD = 4.83) respectively, there was no significant gender difference on the level of intrinsic motivation based on need of achievement ($t(222) = .307, p = .759$), and mastery goals ($t(112) = -.256, p = .799$). However, in contrary to the study prediction, female students had higher level of extrinsic motivation in term of fear of failure (mean = 42.59, SD = 8.23); authority expectations (mean = 38.10, SD = 6.24); peer acceptance (mean = 36.86, SD = 6.86), than their male counterparts (mean = 37.13, SD = 7.55); (mean = 36.25, SD = 7.76); (mean = 34.49, SD = 6.30) respectively. The independent samples t-test found there was a statistically significant gender difference in extrinsic motivation based on fear of failure ($t(222) = -4.81, p < .001$); authority expectations ($t(222) = -2.03, p = .043$); peer acceptance (t

(222) = -2.50, $p = .013$). Furthermore, power motivation was found to be higher in males students (mean = 37.10, SD =6.97) than females (mean = 35.54, SD =6.00) but there was no statistically significant gender differences in relation to this construct ($t(222) = 1.74, p = .083$).

3.2 Gender and academic stress

As the study predicted female students (mean = 40.08, SD =10.10) reported higher level of academic stress than their males counterparts (mean = 36.25, SD =10.04). Results on academic stress are supportive of hypothesis 5 which predict a higher effect of stress on student gender. The 95% confidence limits shows that the population mean difference of the variables lies somewhere between -6.641 and -1.012. An independent samples t-test found that there was a statistically significant difference between stress level of males and females students ($t(222) = -2.680, p = .008$). Therefore the null can be rejected.

3.3 Gender and self-esteem

To examine the possibility of any gender difference in relation to self-esteem, an independent samples t-test was conducted. In support for the hypothesis 3, the study found that females students (mean = 37.24, SD =7.21) have almost the same level of self-esteem as their males counterparts (mean = 37.39, SD =7.42). As can be seen in Table 2, the result indicates that there is no significant difference between male and female students in their level of self-esteem ($t(222) = .307, p = .759$). Therefore the null hypothesis cannot be rejected.

3.4 Expected and actual students' performance

Students had almost similar expectation in terms of their academic performance at the end of the year regarding data analysis and computing (mean = 72.69, SD =11.48) and their final first year grade average (mean = 72.54, SD =8.62). But actual results of students in data analysis and computing (mean = 40.08, SD =10.10) were much lower than students' actual

final first year grade average (mean = 58.88, SD =10.77). However, when the paired differences are compared, results showed that students have overly estimated their performance in data analysis and computing (mean = 17.54, SD =19.31) in comparison to their final first year grade average (mean = 13.66, SD =12.98). The 95% confidence limits show that the population mean difference of students' expected and actual data analysis and computing performance lies somewhere between 14.860 and 20.219. Whereas, the other 95% confidence limits of the population mean difference of students' expected and actual final first year result average lies between 11.859 and 15.461. In line with the study hypothesis number 8, a paired sample t-test showed that there was a statistically significant difference between students data analysis expected performance and their actual data analysis final first year result ($t(201) = 12.906, p < .001$). And a statistically significant difference between students expected performance and final first year grades average ($t(201) = 14.956, p < .001$). Therefore the null can be rejected.

Table 1 showing descriptive analysis of research variables

Variables	Mean	Std. Deviation
Age of respondent	25.04	8.113
Need for achievement (Intrinsic motivation)	48.9152	6.14014
Mastery goals (Intrinsic motivation)	52.7366	5.56473
Power motivations (Extrinsic motivation)	36.0670	6.37470
Fear of failure (Extrinsic motivation)	40.7634	8.40202
Authority expectations (Extrinsic motivation)	37.4821	6.47033
Peer acceptance (Extrinsic motivation)	36.0714	6.76408
Academic stress	38.7991	10.22613
Self-esteem	37.2977	7.27078
What do you expect to be your DATA ANALYSIS ABD COMPUTING 1 result after your first year in college? Give a specific percentage score between 0 and 100.	72.60	11.607
Actual data analysis result at the end of first year	55.15	15.651
What do you expect to be your average result after your first year in college? Give a specific percentage score between 0 and 100.	72.34	8.338
Actual overall average result at end of first year	58.8838	10.77974
Estimated minus actual overall average result at end of first year	13.6608	12.98167
Estimated minus actual data analysis result at the end of first year	17.5396	19.31516

Note: *significant at 0.05 level, 2-tailed

3.5 Motivation styles, self-esteem, academic stress and gender as a predictor of academic performance

To examine the predictability effect of intrinsic motivations as measured based on mastery goals and need for achievement and extrinsic motivation based on authority expectations, power motivations, peer acceptance, and fear of failure, self-esteem, academic stress and gender on freshman's student performance a multi regression analysis was conducted using end of first year actual data analysis and computing results as the first dependent variable and students' final first year actual overall average result as the second dependent variable.

In the first regression analysis (see Table 2) power motivation had a weak significant influence on actual data analysis and computing results ($\beta = .204$, $p = .009$) suggesting students who scored higher in power motivation were extrinsically motivated to increase their performance in data analysis and computing. However, authority expectation had a weak negative significant correlation with data analysis and computing result ($\beta = -.234$, $p = .007$) suggesting that those who scored higher in authority expectation negatively influenced their end of year result in this subject. Self-esteem also was found to have a weak positive significant correlation with data analysis and computing result ($\beta = .181$, $p = .034$). The other predictors did not have a significant influence on actual data analysis and computing results. The overall model did significantly explain a sizeable amount of variance 8 % in actual overall first year data analysis and computing results (*Adjusted R-sq.* = .078; $F(10, 182) = 2.62$, $p = .005$).

Table 2 Multiple Regression Summary on Actual Data Analysis and Computing Result

Model	β	t	$R.sq$	$Adj. R$	F	p
1			.126	.078	2.620	.005a
Constant		1.355				
Age of respondent	.079	1.033				
Need of achievement (Intrinsic motivation)	.088	1.033				
Mastery goals (Intrinsic motivation)	.022	.255				
Power motivations (Extrinsic motivation)	.204	2.627				
Fear of failure (Extrinsic motivation)	-.021	-.211				
Authority expectations (Extrinsic motivation)	-.234	-2.718				
Peer acceptance (Extrinsic motivation)	.010	.126				
Academic stress	.064	.759				
Self-esteem	.184	2.131				
What do you expect to be your DATA ANALYSIS ABD COMPUTING 1 result after your first year in college? Give a specific percentage score between 0 and 100.	.104	-.521				

a. Predictors: (Constant), What do you expect to be your average result after your first year in college? Give a specific percentage score between 0 and 100., Authority expectations (Extrinsic motivation), Gender of respondent, Need for achievement (Intrinsic motivation), Self-esteem, Power motivations (Extrinsic motivation), Peer acceptance (Extrinsic motivation), Academic stress, Mastery goals (Intrinsic motivation), Fear of failure (Extrinsic motivation)

b. Dependent Variable: Actual data analysis result at the end of first year

In contrast, the second multiple regression analysis (see Table 3) found that similarly to the first regression, power motivation significantly influence end of first year overall result average ($\beta = .186$, $p = .018$) and authority expectation was negatively correlated with students final first year overall average ($\beta = -.216$, $p = .014$). However, academic stress was

the only other variable that was found to have a weak positive significant correlation with student performance ($\beta = .171$, $p = .045$). The overall model did significantly explain a sizeable amount of variance 6.4 % in actual overall first year result average (*Adjusted R-sq.* = .064; $F(10, 182) = 2.30$, $p = .014$).

Multiple Regression Summaries on Actual End of First Year Overall Average Result

Table 3

Model	β	t	<i>R.sq</i>	<i>Adj. R</i>	<i>F</i>	p
1			.112	.064	2.307	.014a
Constant		1.894				
Age of respondent	.046	.583				
Need of achievement (Intrinsic motivation)	.080	.937				
Mastery goals (Intrinsic motivation)	.047	.547				
Power motivations (Extrinsic motivation)	.186	2.395				
Fear of failure (Extrinsic motivation)	.094	.958				
Authority expectations (Extrinsic motivation)	-.216	-2.492				
Peer acceptance (Extrinsic motivation)	-.082	-.987				
Academic stress	.171	2.019				
Self-esteem	.151	1.763				
What do you expect to be your DATA ANALYSIS ABD COMPUTING 1 result after your first year in college? Give a specific percentage score between 0 and 100.	.065	.850				

a. Predictors: (Constant), What do you expect to be your average result after your first year in college? Give a specific percentage score between 0 and 100., Authority expectations (Extrinsic motivation), Gender of respondent, Need for achievement (Intrinsic motivation), Self-esteem, Power motivations (Extrinsic motivation), Peer acceptance (Extrinsic motivation), Academic stress, Mastery goals (Intrinsic motivation), Fear of failure (Extrinsic motivation)

- b. Dependent Variable: Actual overall average result at end of first year

4. Discussion

The study examine the intrinsic and extrinsic motivation, self-esteem, academic stress and gender of first year undergraduate students in predicting academic performance. It was shown that students relatively reported strong orientation towards the intrinsic motivational factors of mastery goals and need of achievement and to a less extent orientation towards the extrinsic motivational factors of fear of failure, authority expectation, peer acceptance and power motivation. Although several studies have showed similar trends in relation to the preferred style of motivation in academic settings (e.g. Deci et al., 1991; Dev, 1997; Fortier, Vallerand, & Guay, 1995; Vallerand et al., 1992; Schraw et al, 1995), results indicates that students are also using extrinsic motivation that is particularly based on fear of failure and authority expectation. Moreover, results indicate that females are significantly more extrinsically oriented than male's students. Although the literature suggest that girls are often found to have higher level of persistence, self-regulation, cognitive engagement, mastery orientation, and planning and management than their males counterparts (Brouse et al., 2010; Garvin & Martin, 1999; Vallerand & Bissonnette, 1992; Vallerand et al., 1992; Wintre & Yaffe, 2000). Some research used Harter's (1981) children's Self-report Scale of Intrinsic versus Extrinsic Motivation, have found that sixth grade female students were significantly more extrinsically motivated than male students (e.g. Boggiano, Main, and Katz 1991).

One possible explanation to these findings is that female students past socialization such as putting too much emphasis on adult's approval and feedback (Harter, 1974, 1977) and academic experiences such as teachers who attempted to control students' achievement behaviour (Flink, Boggiano, & Barrett, 1990) might influence females to develop more extrinsic orientation in comparison to boys (Boggiano, Main, and Katz 1991). Contrary to the

study second hypothesis, a multiple regression analysis did not find intrinsic motivation to have any significant influence on students' performance. Surprisingly, extrinsic motivational factors of power motivation and authority expectation significantly influence students' academic performance. Although, this type of motivation is not regarded as an effective style of motivation, the study found that authority expectation was notably stronger than reported level of peer acceptance. Pedagogues and educationist might intervene to examine this construct further and study the influential role of teachers on students' learning and performance particularly at the freshmen's collegiate level. According to Deci and Ryan (1985) Self Determination Theory students who report higher level of extrinsic motivation are less self-determined in their activities and more likely to have lower level of autonomy, competence and relatedness. However Shia, (1998) noted that power motivations are often mistaken for intrinsic motivation because unlike other extrinsic motivation they increase achievement measures and is necessary need to feel competent as a student and feel in control of their own environment.

The majority of students reported similar level of positive self- esteem. In line with hypothesis three the result did not find any significant difference between gender and self-esteem. Erol and Orth (2011) argued gender similarity in self-esteem is very important because false beliefs in gender differences in self-esteem may carry substantial costs. For example, parents, teachers and counsellors may overlook self-esteem problems in male adolescents and young men because of the widespread belief that men have higher self-esteem than women have. Furthermore, variability in self-esteem scores leads us to suggest that some students have low levels of self-esteem. This combined with moderate to high levels of academic stress would suggest that early intervention with these students would be useful in reducing stress and perhaps highlighting how they are able to approach new tasks and assessment on a competent way. Surprisingly, the regression analysis showed that self-

esteem significantly influence students' performance in Data Analysis and Computing. However, self-esteem was not a significant predictor of final first year overall result average. One could argue that students who performed well in Data Analysis and computing might had also high sense of optimism on a top of their high level of self-esteem which was found to improve student coping strategies and lessens their perceived stress (Aspinwall & Taylor, 1992; Grant-Vallone et al., 2003), and more likely to increase students' belief in their abilities and interest in the course (Fraser & Killen, 2005).

As the fifth and sixth hypothesis predicted, the analysis found a significant gender difference in academic stress. According to Misra and Castillo (2004) women tend to report stronger reaction to stress than men. They often have more school related stress due to gender role socialization and increased role strain of being (e.g. mother, wife) rather than biological differences between males and females. Research suggests a significant increase in the level of stress experienced by college students in the last few years (Pritchard, Wilson, and Yamnitz 2007; Sax 1997, 2003). The findings of Ruth Chu-Lien Chao who examines the connection between stress and wellbeing by investigating the mediating effects of social support and dysfunctional coping style emphasize important role of implementing effective measure to address the issue of increased experience of psychological distress among college students and help them and educational institutions building strong social support networks to reduce stress and promote safe and pleasant academic environment. There are several interventions that can be used to cope with stress such as social support, it provides the individual with the necessary feedback, validation and a sense that people can master their own environment through a meaningful interactions in order to relief stressful pressure (Hobfoll, 1988).

The multiple regression analysis also found that academic stress significantly explained student end of first year overall average result. We can conclude from this that

students did experience stress but at a moderate level. However level of stress was higher than students' self-esteem and fear of failure was the highest level among the reported extrinsic motivational factors. The possible reason is probably due to the small student population in DBS College and the lower ratio between students and lecturers which facilitate student lecturer communication and interaction. Another possible reason is the course workload is not much different with students' secondary school level. These findings confirm previous research that suggests optimal level of stress can enhance learning ability (Kaplan & Sadock, 2000). However, stress also reduce students' self-esteem (Bressler & Bressler, 2007; Linn & Zeppa, 1984) and increase fear of failure (Hardy, 2003).

In consistence with hypothesis 7, the study found no significant difference between gender and academic performance. Similarly, this finding corroborates that of Bridgeman & Wendler, (1991) and Keller, Crouse, & Trusheim, (1993) who argue that gender difference does not affect academic performance. Similar findings were also reported in higher education institutions across many cultures (Afuwape and Oludipe 2008; Ajiboye and Tella 2006; Chee, Pino, & Smith, 2005; Naderi et al., 2009; Peiperl & Travekyan, 1997).

The focus of this paper centres on the relative importance of Students' motivational styles, self-esteem, academic stress, gender and students' expectation in predicting academic outcomes. We conclude that the study first predictive model found that power motivation and self-esteem have a positive significant effect on freshman grades in Data Analysis and computing. Whereas, authority expectation have a negative significant effected on these results. The rest of predictors did not have any significant influence on students' academic outcomes. However, the second predictive model found that power motivation and academic stress instead of self-esteem that have a positive significant influence on student's end of first year overall average results. Authority expectations consistently have a negative

significant influence on students overall average result. Both overall models were significant predictors of academic outcomes

4.1 Conclusion

These findings suggest that there are students who persist and perform in certain tasks although they prefer not to (Shia, 1998). According to Hoyenga & Hoyenga, (1984) often power motivation increase achievement measures and the feeling of being competent, which in turn “might” positively influence academic outcomes (e.g. Vallerand, Guay 1995). In addition, self-determined types of extrinsic motivation such as integration and identification were positively lined behavioural persistence which explain that power motivation continuously influenced performance during the first academic year (Blais, Sabourin, Boucher, & Vallerand, 1990; Deci and Ryan's ,1985; Ryan & Connell, 1989; Vallerand et al.,1989). Further research would do well to focus on this issue as it may lead to significant advances in our understanding of extrinsic motivation and its consequences.

Generally most students reported high performance expectations especially for Data Analysis and computing, this is likely to be an unrealistic goal to achieve. Students entering university are more likely to either overestimate their skill set, or underestimate the demands within a university course (Levy & Murray, 2005). Freshmen’s often tend to start their university experience with high confidence in their key skills, particularly in research and writing (Goldfinch & Hughes, 2007). Although, confidence might have a positive influence on student motivation and performance, educationist should pay close attention to manage student’s expectations and encourage student’s engagement. Support programs that are based on managing student’s stress and promoting intrinsic motivation might help student improve their academic outcomes, increase university successful transition, aspiration and retention rates amongst students, particularly those from disadvantaged and lower socio-economic

backgrounds (Gale et al., 2010). Finally, there are some limitations in interpreting the result of this study. The analysis performed are mainly descriptive or correlational, therefore the direction of cause and effect are not possible. Also, the fact that participants were drawn only from one institution, these finding might not be generalizable.

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Appendix

Intrinsic and Extrinsic Motivation Questionnaire (Shia, 1998)

Questionnaire Sample

1. I want to learn everything I need to learn.(Need)

1 2 3 4 5 6 7

2. Finishing an exam first leaves me afraid that I did something wrong or forgot something.(Fear)

1 2 3 4 5 6 7

3. No matter how much I like or dislike a class, I still try to learn from it.(Mas)

1 2 3 4 5 6 7

4. When faced with a difficult test, I expect to fail before I expect to do well.(Fear)

1 2 3 4 5 6 7

5. I sign up for the same classes that my friends sign up for.(Peer)

1 2 3 4 5 6 7

6. I feel that challenging assignments can be great learning experiences.(Mas)

1 2 3 4 5 6 7

7. College helps me to gain valuable knowledge.(Mas)

1 2 3 4 5 6 7

8. My quality of performance is dependent on my grade in the class.(Mas)-R

1 2 3 4 5 6 7

9. Academics are the last thing that I want to talk about when hanging out with my friends.(Peer)-R

1 2 3 4 5 6 7

10. When I receive a low grade on an exam, I try to hide it from others.(Peer)

1 2 3 4 5 6 7

11. I feel good about myself when others do not understand material that is clear to me.(Pow)

1 2 3 4 5 6 7

12. I learn simply for the sake of learning.(Mas)

1 2 3 4 5 6 7

13. When I have to make an academic choice, I go to my parents for advice.(Auth)

1 2 3 4 5 6 7

14. I prefer difficult tasks as opposed to moderate tasks.(Pow)-R

1 2 3 4 5 6 7

15. I never boast about my grades.(Pow)-R

1 2 3 4 5 6 7

16. I am not one of the smartest students in my class.(Pow)-R

1 2 3 4 5 6 7

17. I am satisfied with an average grade, as long as I learn from my mistakes.(Pow)-R

1 2 3 4 5 6 7

18. I sign up to take the easiest teacher so that my grades will be better.(Pow)

1 2 3 4 5 6 7

19. I feel helpless about school after receiving a few bad grades.(Pow)

1 2 3 4 5 6 7

20. I have no preference to impress "power figures".(Auth)-R

1 2 3 4 5 6 7

21. Finishing an exam quickly makes me feel good.(Pow)

1 2 3 4 5 6 7

22. I work best in a group environment.(Need)-R

1 2 3 4 5 6 7

23. I do all that I can to make my assignments turn out perfectly.(Need)

1 2 3 4 5 6 7

24. I feel more accepted by others when I receive a good grade on a test.(Peer)

1 2 3 4 5 6 7

25. I sign up for the classes that will prepare me for the future.(Need)

1 2 3 4 5 6 7

26. I have high expectations of myself.(Need)

1 2 3 4 5 6 7

27. I see myself as well-informed in many academic areas.(Mas)

1 2 3 4 5 6 7

28. I get frustrated when I find out that I did not need to study as much as I did for a test.(Need)

1 2 3 4 5 6 7

29. Sometimes I do more than I have to for an assignment to help me understand the material better.(Mas)

1 2 3 4 5 6 7

30. I find my ability to be higher than most of my peers.(Pow)

1 2 3 4 5 6 7

31. I enjoy learning about various subjects.(Mas)

1 2 3 4 5 6 7

32. Being in college gives me the opportunity to prove to my family that I can achieve something.(Auth)

1 2 3 4 5 6 7

33. I wait till the last minute to complete my assignments.(Need)-R

1 2 3 4 5 6 7

34. I would only sign up for a club if it helped me to reach a long-term goal.(Need)

1 2 3 4 5 6 7

35. I feel ashamed when I receive a low grade.(Fear)

1 2 3 4 5 6 7

36. I have no problem telling my parents when I receive a bad grade on an exam.(Auth)-R

1 2 3 4 5 6 7

37. I feel that my ability is sufficient in the classroom.(Fear)-R

1 2 3 4 5 6 7

38. Even when I have studied for hours, I don't feel that I have studied enough.(Fear)

1 2 3 4 5 6 7

39. I get nervous when my professor begins to hand back tests.(Fear)

1 2 3 4 5 6 7

40. I enjoy challenging tasks.(Fear)-R

1 2 3 4 5 6 7

41. I get frightened that I will not remember anything when I take a test.(Fear)

1 2 3 4 5 6 7

42. In my studies, I set short term, goals.(Fear)

1 2 3 4 5 6 7

43. I have no doubts that I will achieve my academic goals.(Fear)-R

1 2 3 4 5 6 7

44. My academic interests are not influenced by anyone but myself.(Auth)-R

1 2 3 4 5 6 7

45. It is important to complete assignments the way that my professor would want them completed.(Auth)

1 2 3 4 5 6 7

46. It does not bother me when others perform better than I on a test.(Pow)-R

1 2 3 4 5 6 7

47. When I do poorly on an exam, I feel that I let my professor down.(Auth)

1 2 3 4 5 6 7

48. I feel good about myself when I finish a difficult project.(Need)

1 2 3 4 5 6 7

49. I like to spend time reading about things that interest me.(Mas)

1 2 3 4 5 6 7

50. I try to live up to what my professor expects out of me in the classroom.(Auth)

1 2 3 4 5 6 7

51. I try to do my best on every assignment.(Mas)

1 2 3 4 5 6 7

52. I like to be one of the most recognized students in the classroom.(Peer)

1 2 3 4 5 6 7

53. I sign up for the same classes that my friends sign up for.(Peer)

1 2 3 4 5 6 7

54. I have the same attitude toward college as my friends.(Peer)

1 2 3 4 5 6 7

55. I study best when I am alone.(Peer)

1 2 3 4 5 6 7

55. I study best when I am alone.(Peer)-R

1 2 3 4 5 6 7

56. I still want to go to class even when my friends don't go.(Peer)-R

1 2 3 4 5 6 7

57. I feel that the smarter I am, the more accepted I will be by other students.(Peer)

1 2 3 4 5 6 7

58. My grade point average is no-where near the grade point average as my friends.(Peer)-R

1 2 3 4 5 6 7

59. I feel that I should be recognized when I demonstrate my abilities in the classroom.(Auth)

1 2 3 4 5 6 7

60. I set high goals for myself.(Need)

Academic Stress Scale (Agolla & Ongori, 2009)

Questionnaire Sample

The list below is possible sources of stress while you attend university. Indicate how strongly you agree or disagree with the idea that they would be a major source of stress for you

Continuous poor performance.

1 2 3 4 5

Unfair treatment by my boyfriend/girlfriend

1 2 3 4 5

Workload

1 2 3 4 5

Inadequate resources to do assignment

1 2 3 4 5

Uncertainty of getting job after graduating

1 2 3 4 5

Competition with fellow students

1 2 3 4 5

Overcrowded lecture halls

1 2 3 4 5

High expectation from my parents

1 2 3 4 5

Not attending lectures

1 2 3 4 5

Conflict with my fellow students

1 2 3 4 5

Poor performance

1 2 3 4 5

Low motivation

1 2 3 4 5

Conflict with my lecturer

1 2 3 4 5

Lack of available learning resources to support modules

1 2 3 4 5

Based on the choices in the list above, which stressor would give you the most stress?

Rosenberg self-esteem scale (Rosenberg, 1965)

This 4-point Likert style 10-item self-report questionnaire. Is devised to measure participant self-esteem. Scores are calculated as follows:

For items 1, 2, 4, 6, and 7:

Strongly agree = 3

Agree = 2

Disagree = 1

Strongly disagree = 0

For items 3, 5, 8, 9, and 10 (which are reversed in valence):

Strongly agree = 0

Agree = 1

Disagree = 2

Strongly disagree = 3

The scale ranges from 0-30. Scores between 15 and 25 are within normal range; scores below 15 suggest low self-esteem.

Questionnaire Sample

Strongly Agree Agree Disagree Strongly Disagree

1. I feel that I am a person of worth, at least on an equal plane with others.

Strongly Agree Agree Disagree Strongly Disagree

2. I feel that I have a number of good qualities..

Strongly Agree Agree Disagree Strongly Disagree

3. All in all, I am inclined to feel that I am a failure.

Strongly Agree Agree Disagree Strongly Disagree

4. I am able to do things as well as most other people.

Strongly Agree Agree Disagree Strongly Disagree

5. I feel I do not have much to be proud of.

Strongly Agree Agree Disagree Strongly Disagree

6. I take a positive attitude toward myself.

Strongly Agree Agree Disagree Strongly Disagree

7. On the whole, I am satisfied with myself.

Strongly Agree Agree Disagree Strongly Disagree

8. I wish I could have more respect for myself.

Strongly Agree Agree Disagree Strongly Disagree

9. I certainly feel useless at times.

Strongly Agree Agree Disagree Strongly Disagree

10. At times I think I am no good at all.

Strongly Agree Agree Disagree Strongly Disagree
