The Impact of Intrinsic vs. Extrinsic Academic Motivation and Gender on Happiness Among College Students

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Abstract

Understanding how intrinsic and extrinsic motivation relate to happiness, while accounting for gender differences, offers valuable insight into the well-being of college students. The present study investigated the impact of academic motivation type (intrinsic vs. extrinsic) and gender on subjective happiness among students enrolled in a third-level institution in Ireland. Although nationality and residency were not directly assessed, the student population is known to consist predominantly of Irish citizens residing in Ireland. The sample (N = 200) comprised of 63.5% female, 29.5% male, 6% identifying as non-binary, and 1% preferring not to disclose their gender, with participants ranging in age from 18 to 64 years. Academic motivation was assessed using the Academic Motivation Scale (College Version), and happiness was measured using the Subjective Happiness Scale.

Results indicated that gender did not significantly impact levels of subjective happiness. However, motivation type had a significant effect: students who were predominantly intrinsically motivated reported higher levels of happiness than those who were predominantly extrinsically motivated (p = .036). These findings emphasise the importance of prioritising intrinsically-driven education to support student well-being. Future research should include larger, more gender-balanced samples and consider longitudinal or mixed-method approaches to explore changes in motivation over time.

1. Introduction

Human behaviour is shaped by a multitude of biological, social, cultural, economic, environmental, and psychological factors (Bandhu et al., 2024). Among these, motivation – defined as the driving force behind the completion of a task (Martin & Carlson, 2019) – plays a pivotal role in determining how individuals engage with their environment (Bandhu et al., 2024). Motivational drives are commonly categorised into primary and secondary motives. Primary (biological) motives stem from basic physiological needs, such as hunger, thirst, and sleep, while secondary motives extend beyond survival, reflecting personal goals, social relationships, and cultural expectations (American Psychological Association [APA], 2018c). Motivation is further divided into intrinsic, driven by internal satisfaction, and extrinsic motives, influenced by external rewards or pressures – both of which have been shown to significantly impact an individual's well-being (Ryan & Deci, 2020). Intrinsic and extrinsic motivation are central to Self-Determination Theory (Ryan & Deci, 2000b), which identifies autonomy, competence, and relatedness as key elements supporting the individual's well-being and optimal psychological functioning.

Happiness is a fundamental human pursuit that has been a subject of discourse for many centuries, with its definition evolving over time. Subjective well-being (SWB) is now recognised not merely as the absence of mental illness, but also as the presence of positive psychological functioning (Ryan & Deci, 2001). Recent Irish statistics from the Central Statistics Office (Central Statistics Office, 2025) show that the percentage of people above the age of 16 and older who rated their life satisfaction as high was 30.3% in 2023, with a decrease to 27.7% in 2024. Understanding the factors that influence overall well-being, such as life satisfaction and happiness, is therefore essential, particularly among students. This focus is warranted not only due to its impact on students' quality of life and public health, but also because of the broader implications for higher education investment and the critical role students play in shaping the future social capital of society (Cuijpers et al., 2019).

1.1 Motivation

Motivation is a fundamental aspect of human experience that has been extensively studied for centuries. It was initially assumed that all human behaviours were performed to comply with biological states, such as responding to pain or hunger (Morris et al., 2022), or to maintain homeostasis in the body (Berridge, 2004). However, this knowledge was challenged upon observing certain behaviours in animals. For example, rhesus monkeys would solve puzzles in the absence of biological function and external rewards, suggesting that not all behaviours are driven by external incentives (Morris et al., 2022). This accentuates the key differences in the types of motivation outlined in the Self-Determination Theory (SDT). The theory proposed a multidimensional model of motivation that includes three general facets: intrinsic motivation, extrinsic motivation, and amotivation (Ryan & Deci, 2000b).

Motivation is essential for goal-attainment, and it is particularly important among college students (Zhou & Zhang, 2023). Academic motivation refers to a student's internal drive and dedication to their academic pursuits, influencing their willingness to engage in the learning (Akram & Li, 2024) and is a critical component of academic success. Academic motivation is commonly assessed through self-report measures, such as Academic Motivation Scale. While self-report data is valuable, it presents several challenges due to potential biases. Developing more objective methods remains limited, as motivation is internal and difficult to directly observe and quantify (Morris et al., 2022).

1.1.1 Intrinsic Motivation

Humans have innate tendency to explore and learn which starts from birth, when children begin learning through play. This is known as intrinsic motivation (Morris et al., 2022). Intrinsically motivated individuals perform tasks based on the pleasure in the activity itself (APA, 2018b) or intrinsic rewards, e.g., satisfaction, interest in a task, personal growth. Intrinsic motivation creates deeper engagement, particularly in academic settings. For example, intrinsically motivated students tend to focus on understanding and mastering the knowledge rather than external motivators, such as avoiding punishment, leading to enhanced learning and greater happiness (Ryan & Deci, 2001). Additionally, such students are more likely to select more complex problems to solve to test their knowledge (Fauzi et al., 2024).

Intrinsic motivation is linked to higher student engagement (Zhou & Zhang, 2023),

academic success, and well-being. Students who are intrinsically motivated treat their learning as a meaningful experience (Kotera et al., 2023). It is a long-lasting and self-sustaining type of motivation (Ryan & Deci, 2001), which is essential for college students.

1.1.2 Extrinsic Motivation

While intrinsic motivation is considered ideal, not all academic tasks align with student's personal interests or goals. The type of motivation required to carry out tasks that are beyond personal enjoyment is called extrinsic motivation. It is based on external motives, such as financial rewards or the desire to avoid failure and punishment (Ryan & Deci, 2000b). In educational settings, extrinsic motivation is associated with less effective learning and poorer academic outcomes (Kotera et al., 2023). Many academic tasks are not inherently enjoyable, creating a major challenge for educators to cultivate extrinsic motivation in ways that support the sense of autonomy in students.

Although often viewed as the less autonomous and favourable form of motivation, SDT suggests that extrinsic motivation exists along a continuum, with varying levels of autonomy. There are four types, ranging from least to most self-directed, respectively: external regulation, introjected regulation, regulation through identification, and integrated regulation. Ryan and Deci proposed that some types of extrinsic motivation may be positive, particularly in students. For instance, the classic type of extrinsic motivation occurs when students feel externally forced to complete the actions with resentment, disinterest, and resistance. In contrast, self-endorsed extrinsically motivated students will carry out the same tasks with willingness and inner acceptance of the value of the task (Ryan & Deci, 2000a).

1.1.3 Amotivation

Amotivation is the state of lacking intention to act, the absence of motivation. It occurs when an individual has no reason or belief that the behaviour will lead to the desired outcome (Bandhu et al., 2024; Ryan & Deci, 2000a). Amotivation occurs when a person does not value the activity or lacks the competence to carry out the task (Ryan & Deci, 2001).

1.2 Self-Determination Theory

Several theories have been proposed to explain complexity of human motivation, including arousal theory, instinct theory, intrinsic and extrinsic theories, expectancy-value theory, goal-orientation theory, incentive theory, the ARCS model, and SDT (Bandhu et al., 2024). Despite this range, SDT remains the primary framework for understanding human motivation (Zhou & Zhang, 2023).

SDT is a macro theory addressing different types of motivation (Morris et al., 2022; Ryan & Deci, 2000a; Zhou & Zhang, 2023). It posits that individuals are motivated by three basic psychological needs: autonomy, competence, and relatedness. Autonomy refers to the freedom to make one's own choices; competence reflects confidence in one's ability to perform a task; and relatedness refers to the sense of connection and belonging (Ryan & Deci, 2000a). Meeting these needs supports well-being and optimal functioning (Ryan & Deci, 2000b), both of which are essential for academic success (Zhou & Zhang, 2023).

1.3 Defining and Measuring Happiness

Human well-being has long been a central theme in philosophy, with figures such as Aristotle and Confucius contributing ideas of what constitutes a "good life" (Diener et al., 2018). A widely presumed component of a good life is happiness. (Diener, 1984) noted that many philosophers regarded happiness as the highest good and the ultimate motivation for human behaviour. While APA (2018a) defines happiness as an emotion of joy and well-being, it remains a multifaceted concept (Diener et al., 2009; Ryan & Deci, 2001).

The term of happiness is often used interchangeably with life satisfaction and SWB (Diener, 1984; Fauzi et al., 2024; Pradenas et al., 2021; Ryan & Deci, 2001). SWB is the study of how people evaluate their lives positively, including both cognitive and emotional factors (Antaramian, 2017; Diener, 1984). Recognising well-being as more than merely the absence of mental illness marked a significant shift in the field, allowing researchers to explore the positive traits that support flourishing (Antaramian, 2017). SWB consists of three components: life satisfaction, positive affect (PA), and negative affect (NA), with PA and NA often grouped as happiness. It is also conceptualised as hedonic or eudaimonic well-being (Ryan & Deci, 2001). Hedonistic view suggests that well-being consists of pleasure or happiness (Ward & King, 2017), while eudaimonic view emphasises actualising the human

potential and prioritises the well-being that is based on fulfilling and realising one's true nature. The Subjective Happiness Scale, developed by Lyubomirsky and Lepper (1999), is one of the most widely used measures for assessing subjective happiness.

1.4 The Relationship Between Academic Motivation and Happiness

Pursuing happiness is important for many people - happier people are more likely be more productive, creative, healthier, and live longer (Fauzi et al., 2024). A study on 222 undergraduates found that the happiest individuals had strong social connections, were more extroverted and less neurotic, and experienced consistently positive but balanced emotions (Diener & Seligman, 2002).

Antaramian (2017) posed a question of what the optimal level of happiness might be to promote academic success among college students. The results of this study suggested that higher levels of SWB and life satisfaction is closely associated with higher student engagement, self-efficacy, lower academic stress, and higher grades. Students with higher levels of well-being also showed greater academic motivation (Kotera et al., 2023). Similar findings were obtained by Fauzi et al. (2024) who suggested that intrinsic motivation and life satisfaction are essential determinants of happiness among college students.

Bailey and Phillips (2015) observed that intrinsically motivated students reported higher levels of PA and NA, similarly to those of Datu et al. (2017). It was also found that students who expressed intrinsic or identified extrinsic reasons for attending third-level education showed higher levels of PA, compared to less autonomous types of motivation (Breva & Galindo, 2020). Based on these findings, it appears that the higher the intrinsic academic motivation and life satisfaction, the higher the perceived happiness. However, it is important to replicate these studies with more diverse samples to determine if these findings apply to other college student populations (Fauzi et al., 2024).

1.5 Gender Differences in Academic Settings

The literature on gender differences in academic motivation is conflicting, with some studies reporting significant differences and others finding no such distinctions. The research on motivation and gender date back to the late 1990s, when analyses of gender differences in motivation scores were conducted. Li (1999) found that females tend to have higher levels of intrinsic motivation than males, and males are more likely to be externally regulated than

females. Similar findings were reported by LeFebvre and Huta (2021).

Cabras et al. (2023) also proposed that gender differences are present in academic settings, such as female students displaying significantly higher levels of intrinsic motivation than male students, and male students being more amotivated than female students. However, this trend was only noted in the Italian subsample. The other, Russian, subsample, showed no significant differences between genders. Turhan (2020) noted that the type of sample is a significant variable on the effect of gender on academic motivation, i.e., the stage of education influences the effect of gender on academic motivation. Given that the findings are inconsistent and conflicting, it is important to examine the effects of gender on academic motivation across various European universities (Cabras et al., 2023), including Irish college populations.

1.6 Happiness and Gender

Societal and individual factors exhibit gender variations in happiness. For example, females are more likely to prioritise eudaimonic happiness, conversely, males are more likely to emphasise the hedonistic approach (LeFebvre & Huta, 2021). Generally, while females may display higher levels of positive affect, they are more susceptible to negative affect. In contrast, males tend to have more stability (Milovanska-Farrington & Farrington, 2022).

1.7 The Present Study

While some studies explore pairs of these variables – for example, SWB and intrinsic or extrinsic motivation (Pradenas et al., 2021), intrinsic motivation, life satisfaction, and happiness (Fauzi et al., 2024), gender and academic motivation (Turhan, 2020), or motivation, gender, and happiness (LeFebvre & Huta, 2021), there is limited research examining the combined relationship between academic motivation, happiness, and gender, particularly among college students in various European universities, as suggested by Cabras et al. (2023).

Having established the complex interplay between motivation, gender, and happiness, it is important to examine these variables in third-level educational institutions in Ireland. Considering the synthesised findings from the studies above, the present study aims to explore how different types of academic motivation may affect students' happiness, while also examining for gender differences.

1.7.1 Research Question

Are there any differences in subjective happiness of college students, based on the academic motivation type and gender?

1.7.2 Hypotheses

H1 Students who are predominantly intrinsically motivated experience higher levels of subjective happiness, compared to extrinsically motivated students.

H2 Male and female college students experience different levels of subjective happiness.

H3 The relationship between motivation type (intrinsic vs. extrinsic) and subjective happiness differs by gender.

2. Method

2.1 Research Design

The present study employed a quantitative, between-groups, cross-sectional design using an online questionnaire. There were two independent variables (IV) with two grouping levels each, resulting in a two-way analysis of variance (ANOVA) statistical design: IV1 – Motivation (k = 2, intrinsic and extrinsic), and IV2 – Gender (k = 2, male and female). The dependent variable was subjective happiness.

2.2 Participants

Participants (N = 200) were recruited for the study via convenience and snowball sampling methods by distributing the QR code (see appendix A) for the online survey via social media or in person. A priori power analysis was conducted via G*Power 3.1.9.7 (Faul et al., 2007; 2023), to determine a minimum required sample size for a 2-way between-groups ANOVA with a 2 $\times$ 2 factorial design. With a medium effect size (f = 0.25), alpha level of 0.05, and a desired power of 0.80, the analysis indicated a minimum sample size of 179 participants (see appendix B). The present study met this requirement, ensuring adequate power to detect main and interaction effects. Participants' ages varied between 18 to 64 years, with 80.5% being between ages 18-24. The sample consisted of 63.5% female, 29.5% male, 6% non-binary participants, and 1% chose not to disclose the gender. Participants were categorised into two groups to determine their predominant motivation level (intrinsic vs. extrinsic), based on the Academic Motivation Scale scores.

2.2.1 Ethics

The present study received a Red Route (see appendix C) ethical approval by the Psychology Ethics Committee (PEC) at IADT (see appendix D). All procedures adhered to

the ethical guidelines outlined by the Psychological Society of Ireland (2019), the British Psychological Society (2021a), and the ethical standards for internet-mediated research (British Psychological Society, 2021b).

2.2.2 Inclusion and exclusion criteria

Eligibility criteria required the participants to be at least 18 years of age and currently enrolled in, or having been enrolled within the past year, in a third-level educational institution.

Six participants were excluded due to failure to provide consent to participate. Due to the small number of participants who identified as non-binary (*n* = 12, 6% of the total sample) and who did not disclose their gender (*n* = 2, 1% of the total sample), they were not included in the final statistical analysis. This decision was made to ensure the reliability and validity of inferential comparisons between male and female groups, which had sufficient sample sizes for meaningful analysis.

Prior to statistical analysis, the data were screened to ensure participants could be meaningfully categorised as either "predominantly intrinsically" or "predominantly extrinsically" academically motivated. For each participant i, the difference in motivation scores, D_i, was calculated by subtracting their extrinsic motivation score, $S_{ext,i}$, from their intrinsic motivation score, $S_{int,i}$; see eq. 2.1.

$$\mathrm{D_i} = \mathrm{S_{int,i}} - \mathrm{S_{ext,i}} \qquad \text{Eq. 2.1}$$

To determine whether this difference represented a meaningful distinction in motivation type, Cohen's d was calculated based on the distribution of individual score differences for the total number of participants N. The resulting standard deviation of the difference scores, centred on the sample mean difference $\bar{D}$, was used to establish a threshold criterion, as outlined in eq. 2.2.

$$|\mathrm{D_i}| < \mathrm{d} \cdot \sqrt{\frac{1}{\mathrm{N}} \sum_{\mathrm{i}=1}^{\mathrm{N}} (\mathrm{D_i} - \bar{\mathrm{D}})^2} \qquad \text{Eq. 2.2}$$

Participants whose motivation score differences were less than or equal to 2.79 — a value reflecting a small effect size (see table 2.1) — were considered to lack a clear motivational predominance and were thus excluded from group categorisation. This approach ensured

that only participants with a statistically meaningful difference in motivation type were included in the final sample. A total of 21 participants were excluded on this basis, either due to (a) scoring identically on both subscales or (b) having insufficient difference for reliable classification. Following this screening process, the final sample consisted of 159 participants. A visual summary of participant selection and exclusions is presented in fig. 2.1.

Table 2.1

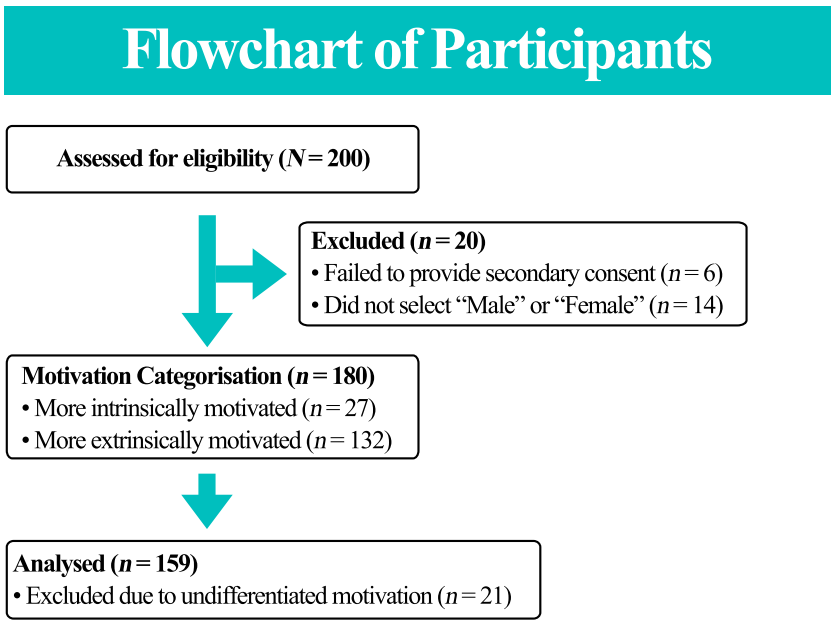
Effect size classifications of the AMS scores of participants

Effect Size	Cohen's *d*	$d \times \sigma D$	Intrinsic	Extrinsic	Undifferentiated
Very small	0.01	0.14	34	141	5
Small	0.2	2.79	27	132	21
Medium	0.5	6.99	18	112	50
Large	0.8	11.18	8	92	80
Very large	1.2	16.77	6	67	107
Huge	2	27.94	0	18	162

Note. Effect size classifications based on Cohen's d, showing the number and percentage of participants within each category. Participants were classified by comparing the absolute difference in their AMS scores to the product of the standard deviation and the corresponding Cohen's d value.

Figure 2.1

Flowchart outlining participant selection and allocation process.



Note. The figure displays the total number of individuals that were assessed for eligibility, excluded, classified into distinct groups based on motivation scores, and the final number of participants included in the analysis.

2.3 Materials

A QR code was used to direct participants to the online questionnaire created with Microsoft Forms. It contained relevant documents, including the information sheet (see appendix E), two consent forms (prior (see appendix F) and post (see appendix G) participation), demographic questions with a section to generate a personalised pseudo-anonymised ID code (see appendix H), a debrief form (see appendix I), and two psychometric scales used to obtain information on the variables investigated in the present study.

2.3.1 Academic Motivation Scale – College Version (AMS-C 28)

Academic Motivation Scale (AMS; see appendix J) measures intrinsic and extrinsic motivation, and amotivation, within educational context. AMS is based on SDT and remains one of the most popular measures of academic motivation (Algharaibeh, 2021). The scale was translated from its original language in French, to English, by Vallerand et al. (1992). The Academic Motivation Scale – College Version (AMS-C-28) is adapted for college students specifically and it contains 28 statements representing answers to the question "Why do you go to college?". Each statement can be answered with a 7-point Likert scale (1 = *Does not correspond at all*, 7 = *Corresponds exactly*). The scores are computed using a provided key. Of these items, 12 refer to intrinsic motivation, another 12 to extrinsic motivation, and the remaining 4 to amotivation. Participants were categorised into either a "predominantly intrinsically motivated" or "predominantly extrinsically motivated" group. The present study focused exclusively on intrinsic and extrinsic motivation, omitting specific motivational subtypes. Original research by Vallerand et al. (1992) reports Cronbach's alpha values between .83 to .86, indicating adequate levels of internal consistency. Internal consistency in the present sample was similarly high (α = .87).

2.3.2 Subjective Happiness Scale (SHS)

The SHS is a self-report instrument developed by Lyubomirsky and Lepper (1999) to assess overall happiness. It consists of four items, each rated on a 7-point Likert scale with item-specific anchors (see appendix K). The fourth item was reverse-scored, and an average score was calculated to determine each participant's overall happiness. Original research

suggests good reliability for this scale, with Cronbach's alpha varying between .79 to .94 (Lyubomirsky & Lepper, 1999). In the present study, the SHS also showed good internal reliability (α = .83).

2.4 Procedure

A pilot study (N = 3) was completed prior to data collection to ensure the clarity of provided instructions. It suggested that the time of survey completion was approximately 7 minutes. No changes had to be implemented post-pilot study.

Participants who chose to take part were directed to the online questionnaire and presented with the information sheet outlining the purpose of the study, what participation involved, and their rights, such as confidentiality, and the right to withdraw at any point until the data analysis begins. The information sheet also included a well-being statement outlining potentially sensitive topics present in the survey, i.e., statements about personal happiness, and participants were encouraged to reflect on their mental well-being before proceeding with the survey. If agreed to take part, the participant was asked to provide initial consent confirming their understanding, eligibility, and voluntary agreement to continue. A brief demographic questionnaire contained two questions on age and gender, and space was provided to create a personalised, pseudo-anonymous ID code. This was followed by the two psychometric scales outlined above: AMS-C-28 and SHS (see section 2.3), consisting of 32 statements altogether. Participants were instructed to rate each statement on a 7-point Likert scale provided with the scales. All sections of the questionnaire were optional except for consent. A second consent was required at the end to reconfirm the agreement to include their answers in the research. Lastly, a debrief form was presented to summarise the study, thank the participant for taking part in the research, offering contact details for withdrawal, and providing links to mental health resources for support.

Upon completing data collection, the responses were exported into Excel. Certain participants were excluded (see fig. 2.1), total scores for each psychometric scale were calculated, and participants were categorised as either "predominantly intrinsically motivated" or "predominantly extrinsically motivated", as outlined above. The final data were imported into the Statistical Package for Social Sciences (SPSS) for further statistical analysis (IBM Corp., 2023).

3. Results

3.1 Overview

The present study investigated the effects of academic motivation type (intrinsic vs. extrinsic), and gender (male vs. female), on subjective happiness in college students. A two-way between-groups ANOVA was conducted using SPSS. Academic motivation and gender served as the independent variables, and subjective happiness was the dependent variable.

3.2 Descriptive Statistics

Following data screening, 41 participants were excluded, resulting in a final sample of 159. Participants were classified as either predominantly intrinsically motivated (16.98%) or predominantly extrinsically motivated (83.02%). Descriptive statistics for each group, including means, standard deviations, and group sizes, are presented in table 3.1.

Table 3.1

Descriptive Statistics for Happiness Scores by Motivation and Gender Group

Gender	Motivation Group	*M*	*SD*	*N*
Female	**Intrinsic**	19.81	4.736	16
	Extrinsic	17.05	4.716	95
	Total	17.45	4.797	111
Male	**Intrinsic**	18.09	7.409	11
	Extrinsic	16.19	5.195	37
	Total	16.63	5.745	48
Total	**Intrinsic**	19.11	5.899	27
	Extrinsic	16.18	4.851	132
	Total	17.20	5.098	159

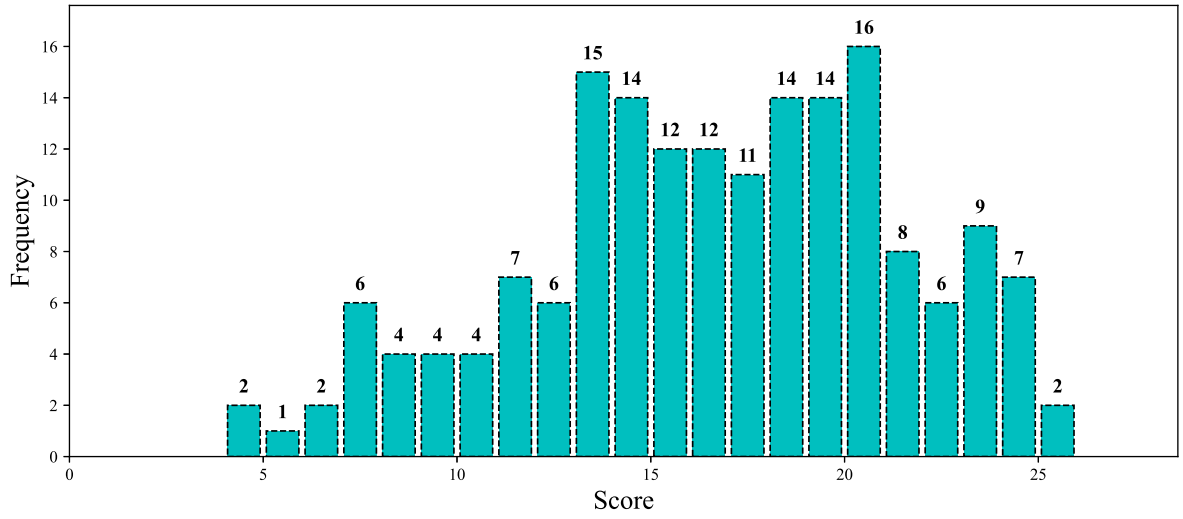
Note. M = mean; SD = standard deviation; N = number of participants.

3.3 Inferential Statistics

A two-way between-groups ANOVA (see appendix L) was conducted to examine the effects of academic motivation type, and gender, on subjective happiness in students. Preliminary Levene's testing confirmed the assumption of homogeneity of variance was not violated (see appendix M). Skewness and kurtosis were assessed to check for normality for the continuous variable (happiness). The results showed that the variable had acceptable skewness (-.208) and kurtosis (-0.449), indicating approximately normal distribution that is suitable for parametric analysis, such as ANOVA (see appendix N). The distribution of happiness scores among participants is provided in fig. 3.1.

Figure 3.1

Histogram of score distribution on the Subjective Happiness Scale.



Note. The labels above each column represent the frequency of participants in that column.

The academic motivation type (intrinsic vs. extrinsic) showed a significant effect on subjective happiness (F (1, 155) = 4.468, p = .036), with a small effect size (partial η^2 = .028). Pairwise comparisons showed that participants in the intrinsic motivation group reported higher happiness levels (M= 19.11, SD = 5.90) compared to those in the extrinsic motivation group (M = 16.81, SD = 4.85). The mean difference was 2.33, SE = 1.103, p = .036, 95% CI [0.15, 4.51]. Therefore, Hypothesis 1 was supported.

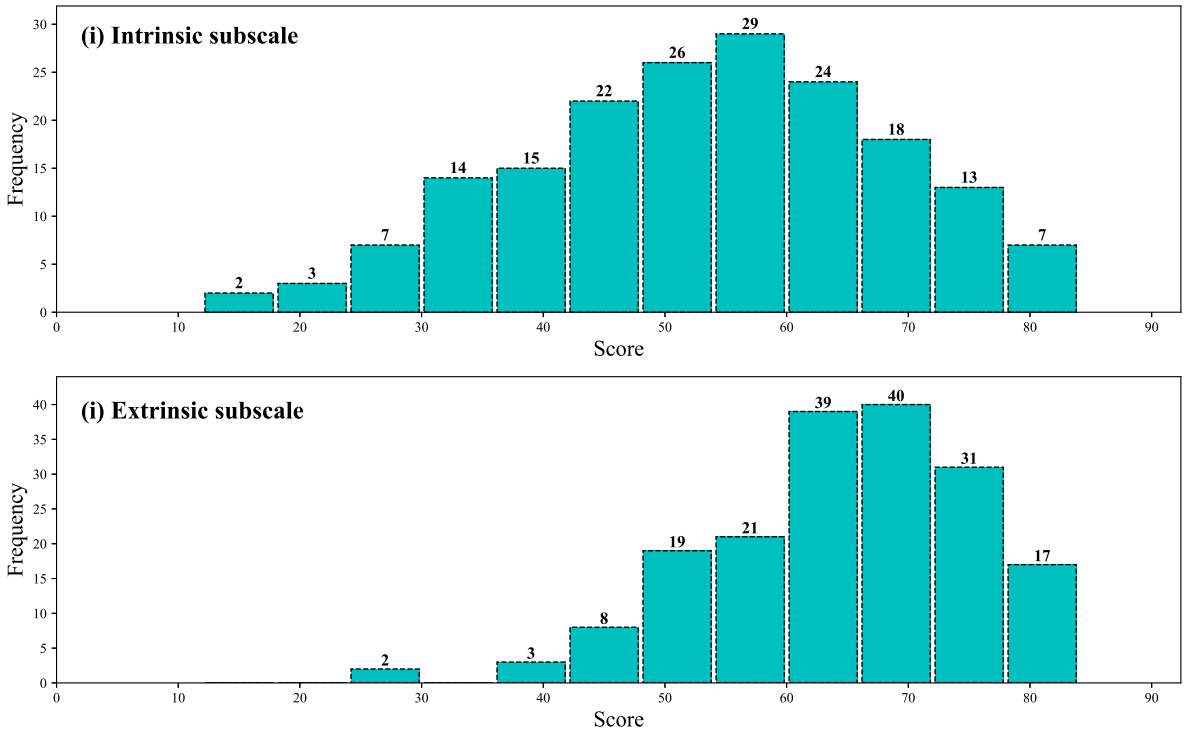
Gender did not have a significant impact on subjective happiness (F (1, 155) = 1.374, p = .243), with the observed power of .214. Therefore, Hypothesis 2 was not supported.

There was no significant interaction observed between academic motivation type, and gender, on students' subjective happiness (F (1, 155) = .151, p = .698), with the observed power of .067. Therefore, Hypothesis 3 was not supported.

The distributions of motivation scores for intrinsic and extrinsic motivation are provided in fig. 3.2.

Figure 3.2

Histogram of Score Distribution of Intrinsic and Extrinsic Academic Motivation



Note. The score distributions shown are for (i) intrinsic motivation and (ii) extrinsic motivation on the Academic Motivation Scale – College Version 28. The labels above each column represent the frequency of participants in that column.

4. Discussion

4.1 Overview

The present study aimed to investigate how intrinsic and extrinsic academic motivation influence happiness, and whether these relationships differ by gender among Irish college students. The hypotheses were partially supported: it was observed that students who were predominantly intrinsically academically motivated displayed higher levels of subjective happiness, compared to predominantly extrinsically academically motivated students. However, there were no significant gender differences observed, and no significant interaction occurred between the motivation type and gender. These results partially address the research question, suggesting a meaningful link between intrinsic motivation and happiness in college students.

4.2 Discussion of Findings

4.2.1 Intrinsic vs. extrinsic academic motivation and happiness

Based on previous literature, it was hypothesised that college students experience different levels of happiness, depending on their academic motivation type (intrinsic vs. extrinsic). The present study found that college students who are predominantly intrinsically motivated in academic settings have higher levels of subjective happiness, compared to extrinsically motivated students. This suggests that being intrinsically motivated in college may affect students' happiness levels positively, which aligns with previous research (Bailey & Phillips, 2015; Breva & Galindo, 2020; Datu et al., 2017; Fauzi et al., 2024). It is also consistent with SDT (Ryan & Deci, 1980), which posits that intrinsic motivation supports basic psychological needs – autonomy, competence, and relatedness – which are key contributors of well-being. These results emphasise the importance of internalised motivation in fostering positive psychological outcomes. However, the nature of self-reported motivation should be noted as it

may not always represent deeper internal drives, and other context-specific factors may be at play, such as academic pressure.

4.2.2 Gender differences in happiness

Previous research has shown that gender can play a significant role in the type and strength of academic motivation. For example, females are more likely to be intrinsically motivated, and males had a higher tendency to be externally regulated than females (Li, 1999). Similarly, another study noted that females were associated with intrinsic motivation, and males with amotivation, although it was only observed in the Italian subsample, and not the Russian one (Cabras et al., 2023).

Gender differences were also observed in happiness levels, as it was noted that females are more likely to display eudaimonic view of happiness, compared to males and their preferred hedonistic approach (LeFebvre & Huta, 2021). Milovanska-Farrington and Farrington (2022) observed that while females may show higher levels of positive affect, they are also more susceptible to negative affect, compared to males. Based on these mixed findings, the present study hypothesised that male and female college students would differ in their levels of subjective happiness. However, this hypothesis was not supported, as no significant gender differences in happiness were found. This maybe due to imbalanced sample, with a higher proportion of females (63.5%) compared to males (29.5%), which could have limited the ability to detect meaningful group differences. It may also suggest that cultural or contextual factors within the Irish college population influenced the outcomes, or that gender may not be a strong predictor of subjective happiness in this specific sample.

4.2.3 Motivation, gender, and happiness

Drawing from prior studies that independently examined the relationships between academic motivation, happiness, and gender (Fauzi et al., 2024; Kotera et al., 2023; Zhou & Zhang, 2023), the present study aimed to integrate these variables within a single framework. It was hypothesised that both the motivation type (intrinsic vs. extrinsic) and gender (male vs. female) would significantly influence subjective happiness in college students.

However, this hypothesis was not supported, as there were no significant interaction effects observed between motivation and gender. This may suggest that while motivation type plays a role in subjective happiness, as outlined in section 4.2.1, its impact is not dependent

on gender. Alternatively, it is possible that the gender imbalance in the sample limited the ability to detect such interaction effects.

4.3 Strengths and Limitations

A major strength of the present study is the use of reliable scales, such as the AMS-C-28 and SHS, enhancing the accuracy and consistency of the data. Additionally, the relatively large sample size (N = 200) is notable for undergraduate research, which allows a more stable and reliable statistical analysis, thus increasing the generalisability of the study. Focusing on the Irish student population in the present study also provides a unique outlook on academic motivation and well-being of college students, enhancing the applicability of the findings to similar demographic groups.

However, the current study is limited by its use of convenience sampling, which, as a result, may increase the risk of selection bias, limiting generalisability. Some limitations are based on the research design of this study, as cross-sectional approach prevents the ability to establish causality and introduces the risk for selection bias. Moreover, self-report measures are likely to cause social desirability bias, which may influence the true findings of a study. The uneven distribution of gender in the present study may lead to limited understanding of diverse experiences and directly affect one of the hypotheses.

4.4 Applying Findings: Practical, Theoretical, and Future Research Perspectives

The present study offers several important implications. From a practical perspective, it suggests that students' happiness and overall well-being can be enhanced by prioritising and promoting intrinsic motivation. Policymakers and educators should be trained to recognise and encourage more autonomous forms of extrinsic motivation, when internal motives are not achievable (Ryan & Deci, 2019).

Theoretically, this study contributes to the continuously expanding field of psychology, exploring the links between motivation and well-being, with a particular focus on third-level education students and the SDT. As a result, the theoretical perspectives also highlight the need for further contextual exploration, particularly in less-researched populations such as Irish college students.

For future research, it would be worthwhile to consider longitudinal designs to help clarify the directionality of the relationship between motivation and happiness over the student's lifespan. Additionally, aiming for larger samples to achieve a more balanced gender distribution and a broader range of participants in respect to age and cultural variations would strengthen generalisability and offer deeper insights into potential cultural and demographic differences.

4.5 Conclusion

In conclusion, the present study aimed to explore the impact intrinsic and extrinsic motivation, and gender, on happiness among Irish college students. While the findings revealed no significant gender differences in motivation or happiness within this sample, the literature suggests varying results across cultures and contexts, highlighting the complexity of these relationships. However, intrinsic academic motivation was found to be linked to higher levels of happiness. This finding highlights the potential benefits of prioritising internalised motivations for attending college, which could contribute to improved overall well-being for students. Future research, incorporating larger and more diverse samples, as well as longitudinal and mixed-method approaches, would provide deeper insights into how to foster a positive academic environment and promote student well-being.

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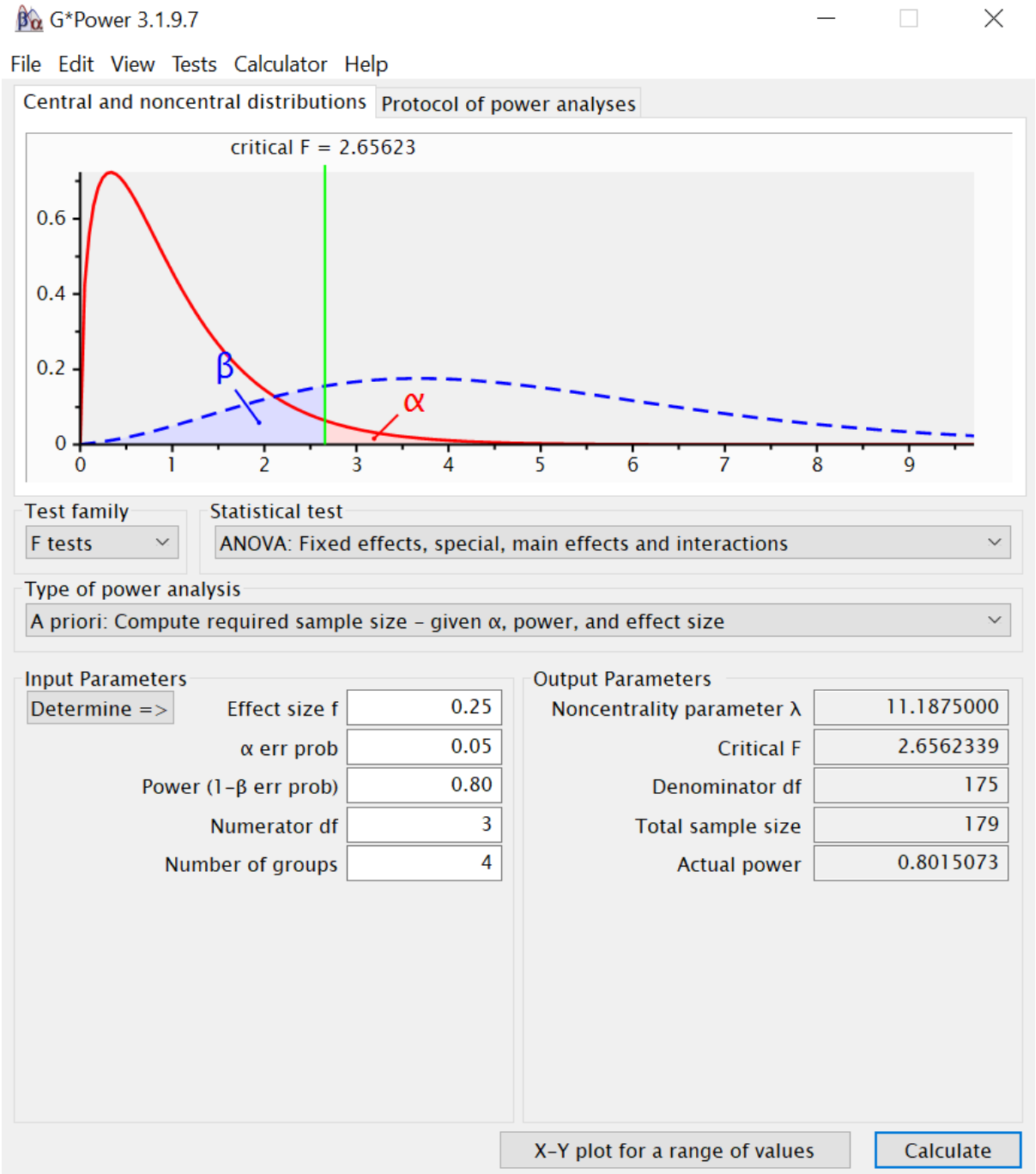
Appendices

A. Poster & QR Code

B. Priori Power Analysis Using G*Power



C. Red Route Ethics Application

Note: This appendix contains the "Section 8: Additional Information For Red Route Projects" part of Ethics application, correct at the time of writing on 23rd November, 2024.

8.1 What are the aims of your research? Include your research question and hypotheses for all studies which are not exploratory in nature (Max. 100 words)

Aims: To examine the effect of intrinsic and extrinsic motivation, and gender, on subjective levels of happiness and life satisfaction in college students.

RQ: Do intrinsically motivated college students experience higher levels of subjective happiness and life satisfaction than extrinsically motivated college students, and does this vary by gender?

H1: Intrinsically motivated college students will report higher levels of subjective happiness than extrinsically motivated college students, with differences observed across genders.

H2: Intrinsically motivated college students will report higher levels of life satisfaction than extrinsically motivated college students, with differences observed across genders.

8.2 What is the specific reason(s) why this is a Red Route project? (Max. 100 words)

My project is considered a Red Route project as I plan to explore the themes of happiness and life satisfaction, which some participants may find upsetting, i.e., if the statements/questions displayed in the survey makes them reflect on their own personal life.

8.3 How will you ensure that participants are not harmed as a result of participation in your research, given your answer to 8.2 above (Max. 100 words)

I am committed to prioritize the wellbeing of participants throughout this research project, and for the remainder of my professional career. In this study, the following measures will be implemented to minimize any potential risks:

- Provision of mental health resources, including counselling services from IADT, will be available for the participants upon debriefing should they require further assistance
- Voluntary participation
- Anonymity + confidentiality (participants will be able to create unique and secure ID codes, protecting their identities)
- Right to withdraw from the study at any point (up until the data analysis beginning in late February / early March of 2025)

8.4 Why do you need to do this project at this stage in your career? For example, is there a specific postgraduate programme which you wish to apply for which requires you to have completed research in this area? Do you have specific additional qualifications or experience which equip you to manage the additional ethical implications in this project? Bear in mind that if your main reason for wishing to do this research is because the area of study is important then your application is likely to be refused – in general it is better for research with important societal implications to be conducted at a time when you have more research experience. (Max. 100 words)

After working closely with children with severe learning disabilities, I have developed necessary skills, e.g., empathy, resilience, and commitment, to confidently undertake this challenging project, motivated by desire to keep learning about motivation and well-being. Having explored relevant literature, this study is a natural next step in my academic journey; a bridge between my current fascination with understanding how a fulfilling life can be cultivated and my future professional endeavours. It allows me to gain professional knowledge for MSc courses – an essential step of my journey towards becoming a psychotherapist.

8.5 Provide rationale as to why other methodologies related to your chosen topic (such as

a systematic review, RSLR, theoretical paper, content analysis, or analysis of an existing dataset) cannot be done in your case (Max. 100 words)

Other listed methodologies would limit the study's ability to use the 3 chosen scales (Satisfaction With Life Scale; Subjective Happiness Scale; Academic Motivation Scale – College Version 28) to measure subjective motivation, happiness, and life satisfaction. Systematic reviews would only review existing responses, whereas the scales would provide recent, relevant, personal responses.

8.6 List supporting documentation which you have included in an Appendix to this application to justify the need for you to do a Red Route project (this might be: the list of entry requirements for a specific postgraduate programme which you are planning on applying for, along with the link to the website where you found this information; a transcript or certificate for a training course related to the area; a letter from your manager or supervisor where you are engaged in voluntary work related to the area, etc.)

1. Appendix A: Letter of consent from IADT counsellor (to confirm that I can include their name in the resources section of the debrief form)
2. Appendix B: Proof of work placement carried out in a special needs school
3. Appendix C: Proof of volunteering in 'Open Spectrum' organisation
4. Appendix D: List of considered MSc programmes

Note: These appendices were provided for the Psychology Ethics Committee at the time of submission on 23rd November, 2024.

8.7 List below the final grades that you received in each module in your most recent completed year of study in IADT (i.e. Fourth year students should provide their 3rd year end-of-year results; Third year students should provide their 2nd year end-of-year results; MSc students should provide their grades to date in each module, 'provisional' grades are acceptable when final grades are not yet available). A Red Route ethics

project requires a very high level of competence and attention to detail which we have found often correlates with higher grades in earlier modules.

1. RMS 4: A
2. Psychology of Mental Wellbeing: A
3. Biological Psychology: A
4. Social Psychology: B-
5. Education & Inclusion: B-
6. RMS 5: B
7. Clinical Psychology: B+
8. Neuroscience & Society: B-

8.8 Planned Study Design (Max. 50 words)

The present study will employ a quantitative, cross-sectional design to test for differences in subjective happiness and life satisfaction between college students who are predominantly intrinsically motivated, and those who are predominantly extrinsically motivated, while considering gender differences, using a multivariate analysis of variance (MANOVA).

8.9 Description of Planned Materials (Max. 200 words). All materials should be included as Appendices to this application. Materials include information sheets, consent forms, debriefs, demographic questionnaire, attitude or psychometric questionnaires, intervention materials, score sheets, technical equipment, and anything else that will be used during data collection. If you intend to use a video/game/app/other media, then you must provide the committee with full access to this through a video file or access to the game/app/media.

1. Information sheet
2. Consent form

3. Demographic questionnaire
4. Scale 1: Subjective Happiness Scale (SHS)
5. Scale 2: Satisfaction With Life Scale (SWLS)
6. Scale 3: Academic Motivation Scale – College Version (AMS-C 28)
7. Confirmation of consent form
8. Debrief form

8.10 Planned Participant Population and Recruitment Method (Max. 100 words)

This study will employ a 2x3 design, aiming to recruit a sample of at least 120 participants aged 18 and above, selected from both IADT and non-IADT populations. The recruitment will be conducted via convenience and snowball sampling methods, accompanied by reaching out to people through my personal social media accounts.

8.11 Planned Procedure (Max. 100 words)

Upon receiving the online link to the survey, participants will first review the information sheet provided describing aims of the study. If they choose to take part in this anonymous, voluntary study, they will be required to consent to their data being included before proceeding further. Participants will then answer a brief demographic questionnaire, followed by the 3 psychometric scales investigating the variables in question. Then, they will provide additional confirmation of consent to use data provided, followed by a debrief, thanking them for participating in the study, and summarizing the purpose of the study.

D. Ethics Approval Email

Outlook

Ethics Application Outcome

From Liam Challenor <Liam.Challenor@iadt.ie>
Date Thu 12/5/2024 8:00 AM
To Paulina Rekasiute (Student) <N00210537@student.iadt.ie>
Cc Eva Garcia-Albarran <Eva.Garcia-Albarran@iadt.ie>

Dear Paulina

Thank you for your application to the psychology ethics committee.

Good news, the PEC has approved your Red application subject to supervisor changes.

The PEC feedback is to remove one of your DV's either selecting the happinness or life satisfaction scale. Please review the literature and discuss this decsion with your supervisor and let the commitee know the outcome of this by email to me before you commence

Dr. Liam Challenor,

Chartered Psychologist, C.Psychol., Ps.S.I
Lecturer - BSc (Hons) in Applied Psychology, MSc in Cyberpsychology
Programme Chair - MSc Cyberpsychology
Chair of the Psychology Ethics Committee (PEC)
PSI: M6789C

Dept Technology and Psychology
IADT

Liam Challenor
IADT

t FIM Disabling- Do Not Move
w iadt.ie

Kill Avenue, Dún Laoghaire
Co. Dublin, A96 KH79.

Institute of Art, Design + Technology Dún Laoghaire

Athena Swan Ireland Bronze Award — Equality Charter

E. Information Sheet

Title of project: The Impact of Intrinsic vs. Extrinsic Academic Motivation and Gender on Happiness Among College Students

You are being invited to take part in the research on the effects of motivation, and gender, on happiness. This project is being undertaken by Paulina Rekasiute for the major research project as part of the BSc (Hons) in Applied Psychology, IADT.

Before you decide whether you wish to take part, it is important for you to understand why this research is being done and what it will involve. Please take time to read this information carefully and discuss it with someone you trust. If there is anything that is unclear or if you would like more information please ask, our contact details are at the end of this information sheet. Thank you for reading this.

What is the purpose of the project?

Researchers are becoming increasingly interested in understanding the dynamics of motivation and how it impacts people's well-being. People are often motivated by different things: some feel driven to carry out tasks due to personal enjoyment and/or sense of fulfilment and self-actualization (known as *intrinsic* motivation), while others may be motivated by rewards or to avoid punishment (known as *extrinsic* motivation). This study aims to explore whether different types of motivation, and gender, affect happiness, particularly in college students.

Who is being invited to take part?

People over the age of 18 and who attend third level education (or have attended in the past year) are invited to participate in this study that explores the topics of motivation, gender, and

happiness. It is important to note that these topics may feel sensitive for some individuals, particularly those who might be experiencing issues like depression, anxiety, or low mood. Before proceeding, you should reflect on whether answering questions regarding these topics may be difficult for you at this time. Supporting resources are available for participants who feel affected by the questions/statements mentioned. Participation is entirely voluntary and anonymous.

What is involved?

If you choose to participate, you will be asked demographic information regarding your age and gender, followed by 2 questionnaires. The first questionnaire asks about motivation in an academic setting, and the second one asks about your subjective happiness. This will take approximately 7 minutes.

Do I have to take part?

You are free to decide whether you wish to take part or not. If you do decide to take part, you will be asked to sign a consent form that lets us know you have read this information sheet and understand what is involved in the research. You are free to withdraw from this study at any time and without giving reasons.

Whether or not you choose to participate in this study will have no impact on your grades in any modules or on your future studies as a student at IADT (if applicable).

What are the disadvantages and risks (if any) of taking part?

The questionnaire will ask you about your subjective levels of happiness, satisfaction with life, and motivation. There is a possibility that there will be questions and/or statements that may cause emotional distress. You may decide not to answer these questions if you do not wish so.

What are the possible benefits of taking part?

By taking part in this study, you may gain personal insights into your own levels of motivation and happiness. Reflecting on these topics may help you improve your self-awareness and prompt you to think about your goals and motivation in life. You will also be contributing to research that aims to improve understanding the dynamics of motivation and people's mental

well-being.

How will my information be used?

Your responses to the questionnaire will be combined with all other participants' data and statistically analysed. No individual's data will be identifiable in the final report. The results of this analysis will be reported in the thesis for the BSc (Hons) in Applied Psychology in the Dun Laoghaire Institute of Art, Design & Technology. This can be requested through the library at IADT, or by emailing the researcher (at N00210537@iadt.ie) or supervisor (at eva.garcia-albarran@iadt.ie). This study may also be published in an academic journal article and may be written about for blog posts or media articles, and these can be requested from the researcher.

How will my data be protected?

Under the EU General Data Protection Regulation (GDPR) the legal basis for collecting data for scholarly research is that of public interest. The regulations regarding the protection of your data will be followed. Only data which is needed for analysis will be collected. By giving your consent to take part in the study you are consenting to the use of your data as detailed in this information sheet.

Access to the data collected will be provided to Cyril Connolly, the associated researchers, supervisors, statistics lecturers, and other tutors unless published in a scientific journal. The data will be stored on a password-protected computer. In the event of a data breach, the data protection officer in IADT will be informed immediately. The data will be coded personally and only identifiable by the individuals themselves. The data is otherwise anonymous. All data not published will be deleted and securely disposed of on or before 7 years from data collection.

The data will be retained by the researcher for at least one year and may be retained for up to 7 years if the results of the study are published in certain capacities (e.g. in a journal article). There is also a possibility that the fully anonymised dataset may be submitted to a journal and made available to other researchers and academics worldwide for verification purposes, but if this occurs it will be ensured that you are not identifiable from the data.

As the supervisor on this project, I, Dr. Eva Garcia-Albarran am responsible for ensuring that all datasets will be stored in accordance with GDPR regulations and those which are not submitted to a journal will be fully deleted on or before February of 2032.

You will find contact information for IADT's Data Protection Officer, Mr Bernard Mullarkey, and more information on your rights concerning your data at https://iadt.ie/about/your-rights-entitlements/gdpr/

Who has reviewed the study?

This study has been approved by the IADT Psychology Ethics Committee.

What if you have any questions or there is a problem?

If you have a concern about any aspect of this study, you may wish to speak to the researcher who will do their best to answer your questions. You should contact Paulina Rekasiute at N00210537@iadt.ie or their supervisor Dr. Eva Garcia-Albarran at eva.garcia-albarran@iadt.ie

Thank you

Thank you for taking the time to read the information sheet.

Date

22/01/2025.

F. Consent Form

CONSENT FORM

Title of Project: The Impact of Intrinsic vs. Extrinsic Academic Motivation and Gender on Happiness Among College Students

Name of Researcher: Paulina Rekasiute

Please tick box

1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions. ☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time. ☐
3. I understand that data collected about me during this study will not be identifiable when the research is published. ☐
4. I am over 18 years of age ☐
5. I am currently enrolled in / have been enrolled (within the past year) in an educational facility ☐
6. I agree to take part in this study. ☐

G. Reconfirmation of Consent

CONFIRMATION OF CONSENT FOR DATA USE

1. Having completed the questionnaire:

    - I consent to the researchers using my answers for their research ○
    - I wish to have my answers removed from the research ○

H. Demographic Questionnaire

PARTICIPANT CODE AND DEMOGRAPHIC INFORMATION FORM

1. Please provide us with an anonymised code which we can use to identify your data if you later wish to have it removed from our dataset. Please do so by answering the following two questions:
    - What are the second and third letters of your address? (For example, if your address is Dublin Road, these letters would be UB)
    - What are the last three digits of your Eircode?
2. Gender: I identify as:
    - Female
    - Male
    - Non-binary
    - Prefer not to say
3. Age: I am
    - Under 18 years
    - 18-24 years
    - 25-34 years
    - 35-44 years
    - 45-54 years
    - 55-64 years
    - 65-76 years
    - 75 years or older
    - I prefer not to say

I. Debrief

Thank you very much for taking part in this research study.

This study is designed to investigate whether different types of motivation, intrinsic and extrinsic, and gender, affect happiness, particularly in college students. Through the questionnaires you have answered, you have contributed to understanding the dynamics of motivation and its affects on the levels of students' happiness.

Withdrawal information

If you have any questions about this study, or if you would like to withdraw your data from the study, please contact the researcher (at N00210537@iadt.ie) or supervisor (at eva.garcia-albarran@iadt.ie). In your email let them know your unique ID code (The second and third letters of your address + Last three digits of your Eircode). If you submit a request for data removal, all data collected from you will be securely deleted. You will be able to remove your data from the study until 14th of February 2025, when the data will be combined and analysed. Data removal will not be possible after that date. Please keep a copy of this information in case you wish to remove your data after leaving this screen.

Data protection

Your data will be treated according to GDPR regulations. You will find contact information for IADT's Data Protection Officer, Mr Bernard Mullarkey, and more information on your rights concerning your data at https://iadt.ie/about/your-rights-entitlements/gdpr/

Support resources

If you have been affected by the content of this study in any way, the organisations below may be of assistance.

***Counsellor services in IADT (available for IADT students ONLY)**
IADT-registered students can access free confidential counselling by contacting studentcounselling@iadt.ie.

***Jigsaw** Visit https://jigsaw.ie/get-support/ for online or in-person support.

***NiteLine** Visit https://niteline.ie/ for support for college students.

***SpunOut - 50808** Visit https://www.textaboutit.ie/ for free, anonymous, 24/7 support via text messages.

Thank you again for taking the time to participate in this research. If you have any questions about this study, please contact the researcher (at N00210537@iadt.ie) or supervisor (at eva.garcia-albarran@iadt.ie).

J. AMS-C-28

ACADEMIC MOTIVATION SCALE (AMS-C 28)

COLLEGE (CEGEP) VERSION

Robert J. Vallerand, Luc G. Pelletier, Marc R. Blais, Nathalie M. Brière, Caroline B. Senécal, Évelyne F. Vallières, 1992-1993

Educational and Psychological Measurement, vols. 52 and 53

Scale Description

This scale assesses the same 7 constructs as the Motivation scale toward College (CEGEP) studies. It contains 28 items assessed on a 7-point scale.

References

Vallerand, R.J., Blais, M.R., Brière, N.M., & Pelletier, L.G. (1989). Construction et validation de l'Échelle de Motivation en Éducation (EME). Revue canadienne des sciences du comportement, 21, 323-349.

WHY DO YOU GO TO COLLEGE (CEGEP) ?

Using the scale below, indicate to what extent each of the following items presently corresponds to one of the reasons why you go to college (CEGEP).

Does not correspond at all		Corresponds a little		Corresponds moderately		Corresponds a lot		Corresponds exactly
1	2		3	4	5		6	7

WHY DO YOU GO TO COLLEGE (CEGEP) ?

1. Because with only a high-school degree I would not find a high-paying job later on.	1	2	3	4	5	6	7
2. Because I experience pleasure and satisfaction while learning new things.	1	2	3	4	5	6	7
3. Because I think that a college (CEGEP) education will help me better prepare for the career I have chosen.	1	2	3	4	5	6	7
4. For the intense feelings I experience when I am communicating my own ideas to others.	1	2	3	4	5	6	7
5. Honestly, I don't know; I really feel that I am wasting my time in school.	1	2	3	4	5	6	7
6. For the pleasure I experience while surpassing myself in my studies.	1	2	3	4	5	6	7
7. To prove to myself that I am capable of completing my college (CEGEP) degree.	1	2	3	4	5	6	7
8. In order to obtain a more prestigious job later on.	1	2	3	4	5	6	7
9. For the pleasure I experience when I discover new things never seen before.	1	2	3	4	5	6	7
10. Because eventually it will enable me to enter the job market in a field that I like.	1	2	3	4	5	6	7
11. For the pleasure that I experience when I read interesting authors.	1	2	3	4	5	6	7
12. I once had good reasons for going to college (CEGEP); however, now I wonder whether I should continue.	1	2	3	4	5	6	7
13. For the pleasure that I experience while I am surpassing myself in one of my personal accomplishments.	1	2	3	4	5	6	7
14. Because of the fact that when I succeed in college (CEGEP) I feel important.	1	2	3	4	5	6	7
15. Because I want to have "the good life" later on.	1	2	3	4	5	6	7

Does not correspond at all		Corresponds a little		Corresponds moderately		Corresponds a lot		Corresponds exactly
1	2		3	4	5		6	7

WHY DO YOU GO TO COLLEGE (CEGEP) ?

16. For the pleasure that I experience in broadening my knowledge about subjects which appeal to me.	1	2	3	4	5	6	7
17. Because this will help me make a better choice regarding my career orientation.	1	2	3	4	5	6	7
18. For the pleasure that I experience when I feel completely absorbed by what certain authors have written.	1	2	3	4	5	6	7
19. I can't see why I go to college (CEGEP) and frankly, I couldn't care less.	1	2	3	4	5	6	7
20. For the satisfaction I feel when I am in the process of accomplishing difficult academic activities.	1	2	3	4	5	6	7
21. To show myself that I am an intelligent person.	1	2	3	4	5	6	7
22. In order to have a better salary later on.	1	2	3	4	5	6	7
23. Because my studies allow me to continue to learn about many things that interest me.	1	2	3	4	5	6	7
24. Because I believe that a few additional years of education will improve my competence as a worker.	1	2	3	4	5	6	7
25. For the "high" feeling that I experience while reading about various interesting subjects.	1	2	3	4	5	6	7
26. I don't know; I can't understand what I am doing in school.	1	2	3	4	5	6	7
27. Because college (CEGEP) allows me to experience a personal satisfaction in my quest for excellence in my studies.	1	2	3	4	5	6	7
28. Because I want to show myself that I can succeed in my studies.	1	2	3	4	5	6	7

KEY FOR AMS-28

 # 2, 9, 16, 23 Intrinsic motivation - to know

 # 6, 13, 20, 27 Intrinsic motivation - toward accomplishment

 # 4, 11, 18, 25 Intrinsic motivation - to experience stimulation

 # 3, 10, 17, 24 Extrinsic motivation - identified

 # 7, 14, 21, 28 Extrinsic motivation - introjected

 # 1, 8, 15, 22 Extrinsic motivation - external regulation

 # 5, 12, 19, 26 Amotivation

K. Subjective Happiness Scale

The Subjective Happiness Scale

The SHS is a 4-item scale of global subjective happiness. Two items ask respondents to characterize themselves using both absolute ratings and ratings relative to peers, whereas the other two items offer brief descriptions of happy and unhappy individuals and ask respondents the extent to which each characterization describes them.

Lyubomirsky, S., & Lepper, H. S. (1999). A measure of subjective happiness: Preliminary reliability and construct validation. Social Indicators Research, 46, 137-155.

For each of the following statements and/or questions, please circle the point on the scale that you feel is most appropriate in describing you.

1. In general, I consider myself:

1	2	3	4	5	6	7
not a very happy person						a very happy person

2. Compared to most of my peers, I consider myself:

1	2	3	4	5	6	7
less happy						more happy

3. Some people are generally very happy. They enjoy life regardless of what is going on, getting the most out of everything. To what extent does this characterization describe you?

1	2	3	4	5	6	7
not at all						a great deal

4. Some people are generally not very happy. Although they are not depressed, they never seem as happy as they might be. To what extent does this characterization describe you?

1	2	3	4	5	6	7
not at all						a great deal

Scoring: Compute the mean across responses to all four questions; item #4 is reverse coded.

L. ANOVA Output

Tests of Between-Subjects Effects

Dependent Variable: HappTotal

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
Corrected Model	157.801[a]	3	52.600	2.065	.107	.038	6.196	.521
Intercept	26505.966	1	26505.966	1040.698	<.001	.870	1040.698	1.000
Sex	34.993	1	34.993	1.374	.243	.009	1.374	.214
MotivGroup	113.794	1	113.794	4.468	.036	.028	4.468	.556
Sex * MotivGroup	3.856	1	3.856	.151	.698	.001	.151	.067
Error	3947.759	155	25.469					
Total	51151.000	159						
Corrected Total	4105.560	158						

a. R Squared = .038 (Adjusted R Squared = .020)

b. Computed using alpha = .05

Estimates

Dependent Variable: HappTotal

MotivGroup	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Intrinsic	18.952	.988	16.999	20.904
Extrinsic	16.621	.489	15.655	17.587

Pairwise Comparisons

Dependent Variable: HappTotal

(I) MotivGroup	(J) MotivGroup	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
Intrinsic	Extrinsic	2.331*	1.103	.036	.153	4.509
Extrinsic	Intrinsic	-2.331*	1.103	.036	-4.509	-.153

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Univariate Tests

Dependent Variable: HappTotal

	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Contrast	113.794	1	113.794	4.468	.036	.028	4.468	.556
Error	3947.759	155	25.469					

The F tests the effect of MotivGroup. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

a. Computed using alpha = .05

M. Levene's Test

Levene's Test of Equality of Error Variances[a,b]

		Levene Statistic	df1	df2	Sig.
HappTotal	Based on Mean	1.552	3	155	.203
	Based on Median	1.409	3	155	.242
	Based on Median and with adjusted df	1.409	3	135.027	.243
	Based on trimmed mean	1.494	3	155	.218

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Dependent variable: HappTotal

b. Design: Intercept + Sex + MotivGroup + Sex * MotivGroup

N. Normality Check

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
MotivGroup	159	1	2	1.83	.377	-1.776	.192	1.167	.383
HappTotal	159	4	27	17.20	5.098	-.208	.192	-.440	.383
Valid N (listwise)	159								

Abbreviations

Expression	Description
AMS	Academic Motivation Scale
AMS-C-28	Academic Motivation Scale - College Version
ANOVA	Analysis of variance
APA	American Psychological Association
IV	Independent variable
NA	Negative affect
PA	Positive affect
PEC	Psychology Ethics Committee
SDT	Self-Determination Theory
SHS	Subjective Happiness Scale
SPSS	Statistical Package for the Social Sciences
SWB	Subjective Well-Being