"Personality Traits and Academic Performance of Management Student in Butwal Sub-Metropolitan City, Nepal"

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Abstract

The study aims to explore the relationship between Personality Traits and Academic Performance. It seeks to identify how different dimensions of Personality Traits influence Academic Performance. The study adopted a quantitative approach, gathering responses from 290 management students of Butwal Sub-Metropolitan City using a structured questionnaire, following a convenience sampling method. Data was analyzed using PLS-SEM such as assessment of measurement items, Model fit, IPMA and implemented bootstrapping techniques for hypothesis. The results revealed that Conscientiousness and Openness to Experience of Personality traits are the key predictors of Academic Performance of Management Students. It is evident that these Conscientiousness and Openness to Experience are the major contributors to the Academic Performance. Therefore, the management Campuses of Butwal Sub-Metropolitan city should consider these aspects to enhance the Academic Performance. By understanding and reformulating policies based on Conscientiousness and Openness to Experience, there is a higher possibility of improving Academic Performance.

Keywords: *Personality Traits, Academic Performance, Conscientiousness, Openness to Experience, Management Students, PLS-SEM.*

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Introduction

The academic performance of management students has become a focal point of interest for educators, employers, and policymakers worldwide, especially in an increasing competitive and dynamic job market. While traditional measures of academic success have emphasized cognitive abilities, recent research highlights the critical role of non- cognitive factors, particularly personality traits, in influencing students' educational outcomes (Farsides & Woodfield, 2002). Despite students possessing similar intellectual capacities, significant disparities in academic achievement persist, suggesting that personality characteristics may serve as key determinants of academic success or failure. The Big Five personality traits conscientiousness, extraversion, agreeableness, openness to experience, and emotional stability have been extensively studied as predictors of academic performance (O'Connor & Paunonen, 2007; Buju, 2013). Given the unique demands of management education, which often requires self-regulation, motivation, teamwork, and adaptability, understanding how these traits affect academic outcomes is particularly important.

Personality traits, as operationalized by the Five Factor Model, refer to relatively stable patterns of thoughts, feelings, and behaviors that differentiate individuals (Costa & McCrae, 1992). In

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this study, personality traits are defined along the dimensions of conscientiousness (characterized by diligence, organization, and goal-directed behavior), extraversion (sociability and assertiveness), agreeableness (cooperativeness and empathy), openness to experience (curiosity and creativity), and emotional stability (the inverse of neuroticism, reflecting resilience to stress). Academic performance, the dependent variable, is measured through cumulative grade point average (CGPA), examination scores, and project evaluations, which collectively reflect students' mastery of management curricula and their preparedness for professional challenges (Buju, 2013). The theoretical grounding of this research lies in the extensive psychological literature that links personality traits to educational achievement, with conscientiousness consistently emerging as the strongest predictor of academic success across diverse populations (Noftle & Robins, 2007; Poropat, 2009).

The historical development of personality theory provides important context for this study. Early trait theorists such as Allport and Cattell laid the groundwork for understanding individual differences, but it was the emergence of the Big Five model in the late 20th century that provided a robust and empirically supported framework for examining personality's influence on life outcomes, including academic performance (Costa & McCrae, 1992). Research has demonstrated that conscientious students tend to exhibit better study habits, greater persistence, and higher achievement, whereas high levels of extraversion may sometimes detract from academic focus due to increased social engagement (O'Connor & Paunonen, 2007). Emotional stability, or the lack thereof, influences students' ability to cope with academic stress and maintain concentration during examinations (Farsides & Woodfield, 2002). These findings underscore the multifaceted ways in which personality traits interact with academic environments to shape outcomes.

Despite the wealth of international research, there remains a significant gap in understanding how personality traits affect the academic performance of management students within the specific cultural and educational context of Nepal, particularly in Butwal Sub-Metropolitan City. This region has experienced rapid growth in higher education institutions offering management programs, attracting a diverse student body with varying socioeconomic and cultural backgrounds. The unique educational environment in Nepal, characterized by collective learning traditions, familial expectations, and resource constraints, may influence how personality traits manifest and impact academic success (Hakimi et al., 2011; Al-Naim et al., 2016). Moreover, management education demands skills such as collaboration, leadership, and adaptability, which may interact differently with personality traits compared to other academic disciplines (Eyong et al., 2014). The lack of localized empirical studies examining these dynamics represents a critical research gap.

Several challenges faced by management students in Butwal further justify this investigation. Students often struggle with self-regulation, motivation, and managing academic stress, factors that are influenced by underlying personality traits (Eyong et al., 2014). For example, high extraversion may lead some students to prioritize social activities over academic responsibilities, thereby negatively affecting their academic outcomes. Conversely, low emotional stability can exacerbate anxiety and impair concentration during critical assessments (Farsides & Woodfield, 2002). Compounding these issues, limited access to academic counseling and psychological support services in Nepal restricts students ability to address these challenges effectively (Ibrahim, 2014). Understanding the role of personality traits in this context is essential for developing targeted interventions to enhance academic performance and student well-being.

This study aims to fill the identified gaps by focusing specifically on postgraduate management students in Butwal Sub-Metropolitan City. Unlike previous research that has predominantly examined undergraduate or mixed student populations in Western contexts, this study provides a culturally contextualized analysis of how personality traits influence academic performance among Nepali management students (Hakimi et al., 2011; Neesha et al., 2017). By isolating this demographic, the research seeks to generate nuanced insights into the interplay of personality traits and academic success within a distinct educational and cultural milieu. Such insights have practical implications for educators, who can tailor pedagogical approaches to accommodate diverse personality profiles, and for policymakers, who can design support systems that foster both academic skills and personality development (Al-Naim et al., 2016; Neesha et al., 2017).

Furthermore, the findings of this study hold significance beyond the local context. By integrating global personality frameworks with the specificities of Nepali management education, this research contributes to the broader discourse on personality and academic achievement in non-Western settings. It challenges the universality of existing models and highlights the importance of cultural and contextual factors in shaping educational outcomes. Ultimately, this study aspires to inform strategies that enhance academic performance, promote student engagement, and prepare management students in Nepal for the complex demands of the contemporary business environment.

In conclusion, the investigation of personality traits and academic performance among management students in Butwal Sub-Metropolitan City is both timely and essential. It addresses a critical gap in the literature by providing localized empirical evidence and practical insights that can improve educational practices and student success. By advancing understanding of how personality influences academic outcomes in this unique context, the

study contributes to the development of more effective, culturally sensitive educational interventions that support the growth of future management professionals in Nepal.

The major objective of the study is to identify how different dimensions of personality traits influence academic performance. The specific objectives are as follows:

- To analyze the perception of the respondents with regard to the constructs of the study by examining their average response level.
- To determine which factors, act as necessary conditions for academic performance by identifying the minimum levels that must be present for the outcome to occur.
- To examine the effect of Conscientiousness, Extraversion, Agreeableness, Openness to experience, Emotional stability on Academic Performance.

Literature Review

The following theoretical and empirical reviews support the conceptual framework of the study and form the basis for the development of hypotheses.

Emotional stability and Academic performance

Research indicates that students with high levels of emotional stability tend to exhibit better academic performance. Ibrahim et al. (2014) performed a meta-analysis demonstrating that emotional stability is positively correlated with higher GPA scores and overall academic achievement. Similarly, Noftle and Robins (2007) found that emotionally stable individuals are more resilient and less prone to anxiety and depression, which facilitates sustained focus and perseverance in academic tasks.

Psychological theories support this relationship. The *Transactional Theory of Stress and Coping* (Lazarus & Folkman, 1984) suggests that individuals with higher emotional stability perceive academic stressors as less threatening and employ more effective coping strategies. This emotional resilience helps students maintain motivation and concentration, leading to improved academic performance. Conversely, students experiencing emotional instability often exhibit heightened anxiety, emotional reactivity, and difficulty concentrating, which impede academic success (Farsidesa & Woodfield, 2002).

Furthermore, empirical studies by Hakimi et al. (2011) established that emotional stability negatively correlates with academic-related stress and positively correlates with academic achievement. Students who can regulate their emotions effectively tend to be more confident and persistent, essential traits for academic success.

H_1: There is a significant relationship between emotional stability and academic performance.

Extraversion and Academic performance

Empirical studies support a positive relationship. For example, Farsidesa and Woodfield (2002) found that extraverted students tend to engage more in classroom activities and collaborative work, which enhances their learning experience and academic achievement. Dzulkifli and Alias (2012) observed that extraversion correlates positively with GPA scores among university students, suggesting that outgoing students leverage their social skills to seek support, participate in discussions, and build effective academic networks.

Supporting this relationship is the *Social-Cognitive Theory of Learning* (Bandura, 1986), which emphasizes the role of observational learning, social interaction, and active engagement in the learning process. Extraverted students are more likely to participate actively, seek feedback, and collaborate, thus facilitating better academic learning. Their proactive behavior increases opportunities for reinforcement and mastery, leading to improved academic outcomes.

Additionally, the *Behavioral Activation System (BAS)* theory posits that extraverted individuals are driven by reward-seeking tendencies and responsiveness to positive stimuli (Gray, 1982). This predisposition can motivate extraverted students to engage more extensively in academic pursuits and persist in challenging tasks, resulting in higher achievement.

However, some studies suggest that in tasks requiring intense concentration and solitary effort, extraversion may not have a significant positive impact. Still, in collaborative or applied learning settings typical of management education, extraverted traits tend to be advantageous.

H_2: There is significant relationship between extraversion and academic performance.

Openness to Experience and Academic performance.

Empirical Studies: Farsidesa and Woodfield (2002) found that openness correlates positively with academic success, particularly for tasks that demand critical analysis, creativity, and exploration. Their findings suggest that open individuals are more motivated to seek out new knowledge and are more adaptable to different learning environments, leading to improved academic performance. Similarly, Noftle and Robins (2007) demonstrated that openness is a significant predictor of verbal IQ and general academic achievement, highlighting the role of curiosity and intellectual engagement in attaining higher grades.

Supportive Theoretical Framework: The *Big Five Model* (Goldberg, 1993; Costa & McCrae, 1992) conceptualizes openness as a fundamental trait that influences information processing and learning motivation. According to the *Cognitive Flexibility Theory* (Spiro et al., 1987), individuals high in openness exhibit greater cognitive flexibility the ability to adapt thinking to

new and complex information. This flexibility enables them to understand and integrate novel concepts more effectively, thereby facilitating higher academic achievement.

Furthermore, the *Information Processing Theory* (Daneman & Carpenter, 1980) suggests that openness enhances cognitive processing by promoting greater curiosity and exploration, leading to more effective learning strategies. Open individuals are more likely to engage in deep learning, critical thinking, and innovative problem solving, which are essential components of academic success.

The *Motivation Theory of Curiosity* (Loewenstein, 1994) postulates that curiosity-driven individuals are intrinsically motivated to acquire knowledge. High openness fosters curiosity, which motivates students to actively seek out learning opportunities, thereby improving their academic outcomes.

Contextual Considerations: While generally positively associated with academic success, the strength of the relationship between openness and performance may vary depending on subject matter and learning environment. For instance, in research-intensive or creative discipline and openness play a more prominent role. Conversely, in routine or structured tasks, its influence might be less pronounced.

In management education, openness encourages students to explore innovative ideas, adapt to dynamic business environments, and approach problems creatively all of which contribute to improved academic performance.

H_3: There is a significant relationship between openness to experience and academic performance.

Agreeableness and Academic performance

Research by Firesides' and Woodfield (2002) indicated that agreeableness positively correlates with academic achievement, especially in collaborative learning environments where teamwork and harmonious interpersonal interactions are critical. Students who are high in agreeableness tend to foster positive relationships with peers and instructors, which can lead to better engagement and academic success. Similarly, Poropat (2009) reported that agreeableness was one of the traits positively associated with academic performance, although its impact was generally less pronounced compared to conscientiousness and openness.

From the *Big Five Model* (Goldberg, 1993; Costa & McCrae, 1992), agreeableness is linked to social harmony, emotional regulation, and trustworthiness traits that can facilitate positive social interactions within academic settings. These social skills can enhance motivation,

participation, and persistence in learning tasks. Additionally, *Social Interdependence Theory* (Johnson & Johnson, 1989) posits that agreeable individuals are more cooperative and supportive of collaborative efforts, leading to improved collective and individual academic achievement.

Agreeableness may influence academic performance indirectly through social cohesion and emotional support. For example, students with high agreeableness might receive more help from peers, experience less conflict, and create a positive classroom climate, all of which support learning. Moreover, agreeable students tend to display higher levels of motivation and lower levels of hostility and deviance, conducive to academic success.

H_4: There is a significant relationship between agreeableness and academic performance.

Conscientiousness and Academic performance

Numerous studies have consistently demonstrated a strong positive correlation between conscientiousness and academic performance. For example, Poropat (2009) identified conscientiousness as the most robust predictor among the Big Five traits, with higher levels linked to better grades and higher standardized test scores. Similarly, Noftle and Robins (2007) found conscientious students tend to achieve higher academic success across various education levels, including college and high school.

Theoretically, conscientious individuals are disciplined and diligent, qualities that promote effective study habits, time management, and persistence—factors critical for academic achievement. According to Roberts et al. (2007), conscientiousness influences goal-oriented behaviors and self-regulation, which are directly related to effort and perseverance in academic tasks. This trait fosters proactive behavior such as planning, discipline, and carefulness, all of which enhance learning outcomes.

Conscientiousness affects academic performance through various mechanisms, including setting and pursuing goals, managing time efficiently, and maintaining focus on academic tasks. These behaviors lead to consistent study routines, better preparation, and higher grades. Research by Komarraju et al. (2011) indicates that conscientiousness is associated with effective learning strategies and higher academic motivation.

H_5: There is a significant relationship between conscientiousness and academic performance.

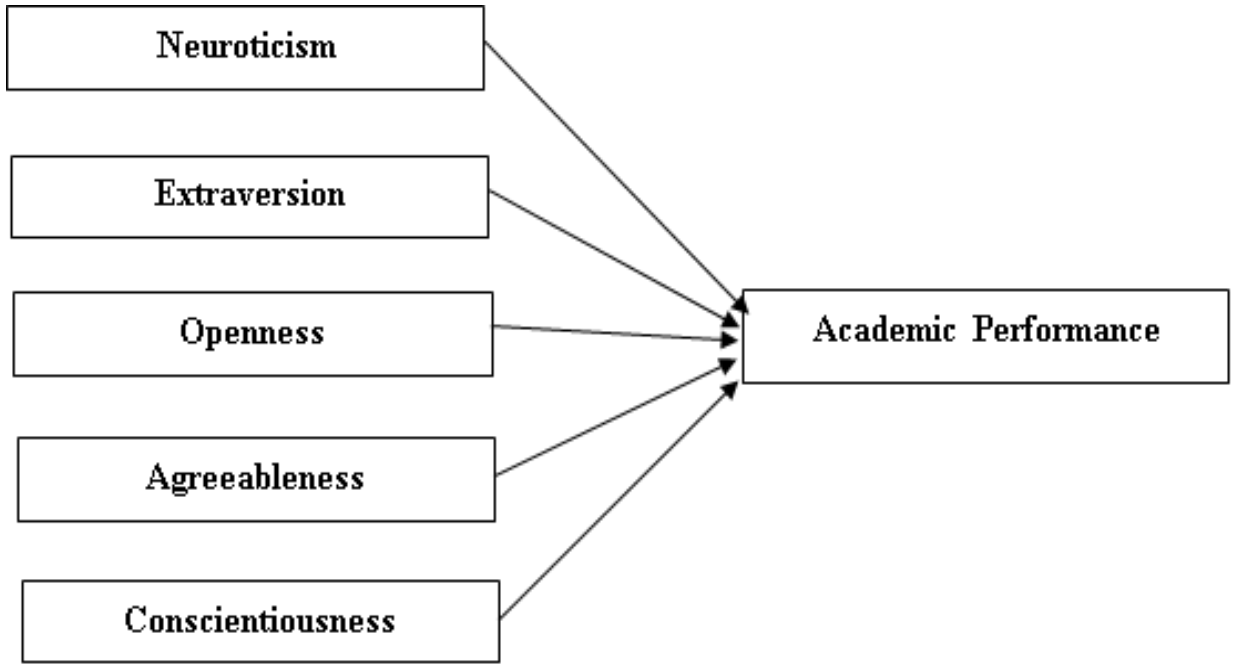
Research Framework

The research framework of the study is outlined below:

Adopted from Khan (2018)

Operational Definition

Personality traits in management are stable characteristics that influence decision- making, leadership effectiveness, and workplace interactions (McCrae & Costa, 1997). This study applies the Five-Factor Model (Big Five Personality Traits) to define managerial traits (Goldberg, 1990; Barrick & Mount, 1991). Extraversion reflects a manager's assertiveness and energy in professional interactions (Judge et al., 2002), while agreeableness denotes cooperation, empathy, and relationship management (Barrick & Mount, 1991). Conscientiousness highlights organizational skills and responsibility (McCrae & Costa, 1997), whereas emotional stability measures resilience under stress (Goldberg, 1990). Openness to experience assesses adaptability, innovation, and receptiveness to change (McCrae & Costa, 1997). These traits will be evaluated through self-reported questionnaires, employee and peer



feedback, and behavioral observations to ensure a comprehensive analysis of managerial personality in Butwal's business environment.

Research Methodology

A research design is a structured plan that guides data collection and analysis, shaping the study (Cooper & Schindler, 2003). This study adopts Descriptive Research Design and Causal-Comparative Research Design to achieve its objectives.

Descriptive Research Design systematically presents characteristics, behaviors, or phenomena without altering variables. It identifies trends, patterns, and relationships within a population (Creswell, 2014). Causal-Comparative Research Design examines

cause-and-effect relationships by comparing groups with existing differences, analyzing the impact of independent variables on dependent variables without direct manipulation (Fraenkel & Wallen, 2009). Likewise, Kerlinger (1986) highlights ex post facto research, where past independent variables are analyzed to assess their effects on dependent variables (Kerlinger, 1986; Pant, 2012, p. 117). Common statistical methods include the Spearman Rank Order Coefficient, Phi Correlation Coefficient, Regression, t-test, Chi- square, and Analysis of Variance (Isaac, 1978; Pant, 2012, p. 118).

By combining descriptive and causal-comparative designs, this study effectively examines variable relationships and their impact (Kerlinger, 1986), ensuring a structured and systematic approach.

Population and sample

The population of this research study comprises all respondents within the research area. In this study, the chosen research area is Butwal Sub-Metropolitan City, and the population consists of all management students in different Management campuses located in Butwal. The total number of students in these campuses are 702. Therefore, the population of the study is identified as 702. The details of the campuses and their respective number of students are presented in Table 1.

Table 1 - *Total management student of community campuses in Butwal*

S. No	Name of Community campuses	Number of students
1	Lumbini Banijya Campus	357
2	New Horizon College	47
3	Siddhartha Gautam Buddha Campus	124
4	Butwal Multiple Campus	174
	Total	702

Sample is a part of a population or subset of population and denoted by n. The total sample size for this study has been obtained using the formulae developed by Yamane (1967). In case of population size is known, the Yamane formula for determining the sample size is given by: n= N/1+Ne2

Where, n= sample size, N= Population size, and e= Margin of error (MOE), e=0.05 based on research condition

Thus, the sample size of the study is n = 255

Sampling method

The sampling method is chosen to select sample respondents from the overall population for data collection. In this context, the convenience sampling method is specifically student to approach the sample respondents. Given that the study focuses on the personality traits and academic performance of management student in Butwal Sub-metropolitan city, the convenience sampling method is deemed appropriate. This choice is made because the number of male students is relatively low, allowing for the identification and random selection of individuals from the list of male students to mitigate bias among respondents.

Nature and Sources of Data Collection

This study primarily relies on quantitative data, which were collected from primary sources. A structured questionnaire was designed to gather first-hand information directly from respondents.

Survey Instrument

A self-structured questionnaire was used as the survey instrument for data collection. It was developed based on operational definitions from previous literature. The questionnaire employs a five-point Likert scale (7 = Strongly Agree, 6 = Agree, 5 = Somewhat Agree, 4 = Neutral, 3 = Somewhat Disagree, 2 = Disagree, and 1 = Strongly Disagree) to gather responses from participants.

A set of questions was designed to measure each independent and dependent variable, totaling 30 items. To ensure clarity and accuracy, a pilot test was conducted by distributing the questionnaire to a sample of 10 respondents. Out of 322 distributed questionnaires, 290 were fully received, yielding a response rate of 90%**.**

Statistical Tools

The study utilized various statistical tools based on the nature of the data. Descriptive statistics, including mean and standard deviation (SD), were computed to analyze and interpret customer responses. Additionally, a reliability test was conducted to assess the consistency of the research instrument. A normality test, specifically the Kolmogorov-Smirnov (K-S) test, was performed to evaluate the data's distribution.

After assessing normality, parametric and non-parametric tests were applied in inferential statistics. Furthermore, correlation analysis was used to measure the relationship between variables.

Result and Analysis Measurement Items Assessment

Table 2 - *Assessment of scale items*

Variables	Items	Outer Loading	VIF	Mean	SD
Openness	O1	0.703	1.489	5.172	1.698
	O2	0.89	3.34	5.144	1.531
	O3	0.775	2.149	4.725	1.788
	O4	0.881	2.998	5.12	1.505
	O5	0.872	2.524	5.144	1.672
Conscientiousness	C1	0.715	1.463	2.828	1.698
	C2	0.888	3.198	2.856	1.531
	C3	0.786	2.15	3.275	1.788
	C4	0.872	2.649	2.88	1.505
	C5	0.691	1.463	3.141	1.768
Extraversion	E1	0.895	3.108	4.735	1.875
	E2	0.88	3.086	4.351	1.976
	E3	0.833	2.37	4.388	2.067
	E4	0.819	2.271	3.907	1.95
	E5	0.92	4.178	4.234	1.958
Agreeableness	A1	0.834	2.634	3.595	1.939
	A2	0.836	2.928	3.141	1.86
	A3	0.92	3.977	3.742	1.885
	A4	0.888	3.454	3.784	1.954
	A5	0.783	1.88	4.735	1.875
Neuroticism	N1	0.862	2.862	5.959	1.392
	N2	0.906	3.935	5.821	1.484
	N3	0.905	4.141	5.718	1.619
	N4	0.731	1.797	5.034	1.758
	N5	0.775	1.679	5.512	1.692
Academic Performance	AP1	0.854	2.145	5.144	1.672
	AP2	0.809	2.041	5.213	1.775
	AP3	0.83	2.2	5.491	1.484
	AP4	0.763	1.771	5.794	1.528
	AP5	0.765	1.735	5.186	1.564

Table 2 presents the standardized outer loading and Variance Inflation Factor (VIF) of the scale items employed to measure the variables pertinent to this investigation. In accordance to Sarstedt et al. (2017), the outer loading of an item must exceed 0.708 to signify a substantial contribution of that item in assessing the associated variable. Nonetheless, an outer loading value surpassing 0.70 may also be deemed acceptable, provided that the Average Variance Extracted (AVE) value of the related variable exceeds 0.50. Within Table 2, one items, specifically C5, exhibit values below 0.70; however, the variable linked to these items demonstrates AVE values greater than 0.50. Therefore, all 30 scale items are preserved for subsequent analysis. Furthermore, the VIF values for each item are less than 5, thereby indicating no multicollinearity within the scale items (Sarstedt et al., 2014). Most of the mean value in higher side representing agreeableness toward each statement. The SD

value is small indicating less deviation (variation) in responses therefore the data is suitable for the data analysis.

Quality Criteria Assessment

Table 3 - *Construct Reliability and Validity*

Variables	Alpha	CR (rho_a)	CR (rho_c)	AVE
Academic performance	0.864	0.876	0.902	0.648
Agreeableness	0.906	0.914	0.93	0.728
Conscientiousness	0.851	0.863	0.894	0.631
Extraversion	0.92	0.929	0.94	0.757
Neuroticism	0.893	0.898	0.922	0.703
Openness	0.883	0.899	0.915	0.684

Table 3 contains the values of Cronbach's Alpha, Composite Reliability (CR), and Average Variance Extracted (AVE) to evaluate the convergent validity of the variables employed in this study. The Cronbach's Alpha coefficients for all items exceed the threshold of 0.705, signifying the adequate contribution of each scale item in the assessment of related constructs (Bland & Altman, 1997). Furthermore, the CR values for rho_A and rho_C surpass the minimum criterion of 0.70, denoting a robust measure of internal consistency (Saari et al., 2021; Hair et al., 2022). The AVE values also exceed the pivotal threshold of 0.50, suggesting that each variable accounts for more than 50 percent of the explained variance. This finding confirms the establishment of convergent validity

(Hair et al., 2022). Subsequently, the outcomes depicted in the table as mentioned above satisfy all requisite of quality criteria measures.

Discriminant Validity

Table 4 - *Heterotrait-Monotrait (HTMT) ratio matrix*

	Academic performance	Agreeableness	Conscientiousness	Extraversion	Neuroticism	Openness
Academic performance						
Agreeableness	0.577					
Conscientiousness	0.575	0.411				
Extraversion	0.569	0.887	0.402			
Neuroticism	0.804	0.468	0.743	0.53		
Openness	0.643	0.462	0.763	0.44	0.727	

Table 4 contains the HTMT ratio of the correlation matrix, which evaluates the discriminant validity of the latent variables. The values of the HTMT ratio vary from 0.402 to 0.887. The HTMT ratio values need to remain below the critical threshold of 0.85; nevertheless, a range extending up to 0.90 is deemed acceptable, as posited by Henseler et al. (2015). Consequently, the presence of discriminant validity is confirmed among the reflective constructs (Hair & Alamer, 2022).

Table 5 - *Fornell-Larcker Criterion*

Variables	Academic performance	Agreeableness	Conscientiousness	Extraversion	Neuroticism	Openness
Academic performance	**0.805**					
Agreeableness	0.521	**0.853**				
Conscientiousness	-0.794	-0.374	**0.794**			
Extraversion	0.511	0.828	-0.362	**0.87**		
Neuroticism	0.713	0.441	-0.65	0.497	**0.839**	
Openness	0.801	0.426	-0.969	0.403	0.649	**0.827**

Table 5 displays the Fornell-Larcker Criterion, an important discriminant validity assessment in a structural equation model (SEM) (Fornell & Larcker, 1981). This criterion is satisfied when the average variance extracted (AVE) for every construct is higher than the squared correlation between that constructs and any other construct in the model. The diagonal entries, the square root of AVE of every construct, are to be higher than the off-diagonal values for their corresponding columns and rows. As evident in Table 5, diagonal values of Academic performance (0.805), Agreeableness (0.853), Conscientiousness (0.794), Extraversion (0.870), Neuroticism (0.839) and openness (0.827) are all higher than their inter-construct correlations. This means the measurement model's discriminant validity is assured, implying that each construct is unique and taps into a distinct segment of variance (Hair et al., 2010). This ensures that the constructs do not overlap and that the measures are measuring what they should measure.

Table 6 - *Cross loadings*

	Agreeableness	Academic performance	Conscientiousness	Extraversion	Neuroticism	Openness
A1	**0.834**	0.402	-0.256	0.595	0.273	0.304
A2	**0.836**	0.384	-0.292	0.566	0.306	0.341
A3	**0.92**	0.484	-0.387	0.701	0.399	0.421
A4	**0.888**	0.399	-0.279	0.706	0.352	0.34
A5	**0.783**	0.517	-0.351	0.785	0.503	0.375

AP1	0.448	**0.854**	-0.759	0.397	0.562	0.872
AP2	0.403	**0.809**	-0.593	0.328	0.498	0.63
AP3	0.399	**0.83**	-0.624	0.401	0.608	0.633
AP4	0.396	**0.763**	-0.581	0.45	0.54	0.596
AP5	0.448	**0.765**	-0.606	0.489	0.665	0.627
C1	-0.343	-0.633	**0.715**	-0.266	-0.536	-0.703
C2	-0.35	-0.701	**0.888**	-0.358	-0.558	-0.89
C3	-0.249	-0.558	**0.786**	-0.311	-0.506	-0.775
C4	-0.338	-0.703	**0.872**	-0.315	-0.521	-0.881
C5	-0.174	-0.528	**0.791**	-0.168	-0.457	-0.556
E1	0.738	0.517	-0.351	**0.895**	0.503	0.388
E2	0.682	0.455	-0.327	**0.88**	0.455	0.361
E3	0.659	0.359	-0.267	**0.833**	0.362	0.288
E4	0.72	0.419	-0.293	**0.819**	0.39	0.345
E5	0.745	0.45	-0.327	**0.92**	0.428	0.355
N1	0.338	0.579	-0.524	0.419	**0.862**	0.523
N2	0.395	0.602	-0.55	0.463	**0.906**	0.543
N3	0.335	0.56	-0.545	0.385	**0.905**	0.529
N4	0.263	0.512	-0.493	0.227	**0.731**	0.498
N5	0.476	0.695	-0.589	0.533	**0.775**	0.601
O1	0.343	0.633	-0.715	0.266	0.536	**0.703**
O2	0.35	0.701	-0.888	0.358	0.558	**0.89**
O3	0.249	0.558	-0.786	0.311	0.506	**0.775**
O4	0.338	0.703	-0.872	0.315	0.521	**0.881**
O5	0.448	0.507	-0.759	0.397	0.562	**0.872**

Table 6 indicates the cross loadings values of all the items and variables used in this study. According to the recommended standard for assessing cross-loading, it is advised to determine that an indicator variable should exhibit a loading of at least 0.70 towards its own construct and must not have any cross-loading on any other construct included in the measurement model. This recommendation is based on the work of Hair et al. (2014). To establish the discriminant validity of the constructs in the measurement model, Table 6 presents the loading values of each construct, which demonstrates that each construct has a loading greater than 0.70 on the construct with which it is linked. Further the loading values of items associated with variables are greater than the other items which are not associated with them. Hence, this table provides evidence for the discriminant validity of the constructs in the measurement model.

Model Fit Assessment

The SRMR and NFI fit indices evaluate the model's explanatory efficacy. The model's SRMR value is 0.086, below the acceptable threshold of 0.10 (Bollen &Stine, 1992). Consequently, this finding suggests that the model exhibits adequate explanatory capability.

Moreover, the effect sizes of Agreeableness, conscientiousness, Extraversion, Neuroticism and Openness on Academic Performance are quantified as 0.03, 0.06, 0.08, 0.156 and 0.316, respectively. This reveals Agreeableness, Conscientiousness, Extraversion demonstrate a minor effect on academic performance. In contrast, Neuroticism and Openness impact on Academic performance is moderate on academic performance (Cohen, 1988).

Finally, the r-square values corresponding to Academic performance is 0.790 on academic performance respectively. This signifies that Academic performance possesses robust predictive power, whereas Academic performance demonstrates Substantial predictive ability (Hair et al., 2013).

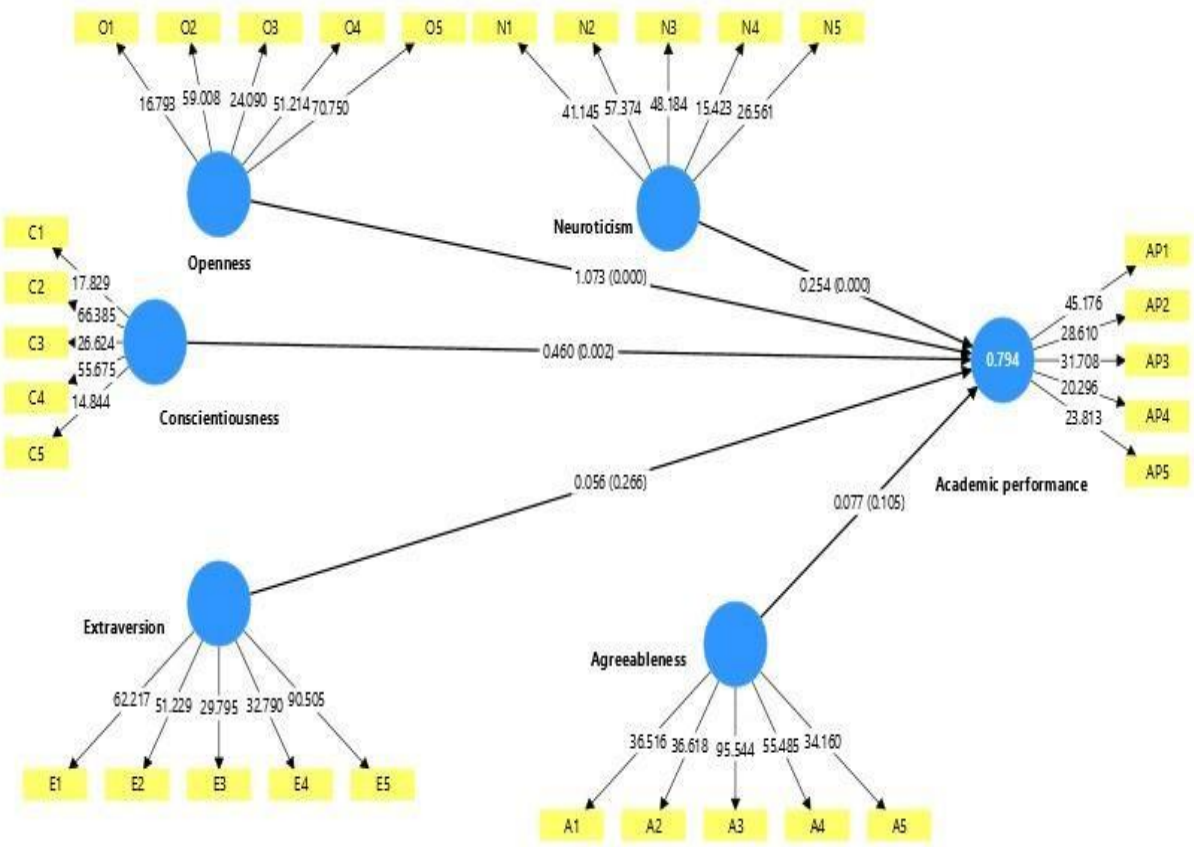


Figure 1: Path Relationship Diagram

Table 7 - *Hypothesis Testing Using Bootstrapping*

Hypotheses	β	Mean	ST DEV	Confidence Interval	T statistics	P values	Decision

				2.50 %	97.50 %	(O / ST DEV)		
Openness-> Academic performance	1.073	1.075	0.154	0.767	1.371	6.97	0	Accepted
Conscientiousness -> Academic performance	0.46	0.463	0.148	0.163	0.745	3.104	0.002	Accepted
Extraversion -> Academic performance	0.056	0.056	0.05	-0.043	0.152	1.113	0.266	Rejected
Agreeableness -> Academic performance	0.077	0.076	0.048	-0.02	0.169	1.621	0.105	Rejected
Neuroticism -> Academic performance	0.254	0.256	0.042	0.177	0.342	6.104	0	Accepted

Figure 1 and Table 7 reports of a bootstrapping analysis with sub-samples, which examines decision regarding the proposed hypothesis. Hypothesis H1, H2 and H5 have achieved acceptance at significance threshold 0.05. However, H3 and H4 are rejected as their p value is above 0.05. There is a positive and significant impact of openness, conscientiousness and Neuroticism on Academic performance.

Table 8 - *Important Performance Map*

	LV performance	Importance
Agreeableness	47.547	0.077
Conscientiousness	32.824	0.46
Extraversion	55.701	0.056
Neuroticism	77.373	0.254
Openness	68.035	1.073
Mean	56.296	0.384

Table 8: The total effect of agreeableness, Conscientiousness, extraversion, neuroticism and openness on academic performance for the unstandardized effects. These effects are the same as the unstandardized weight of ordinary least regression modeling (Hair et al .2010). Further, the performance of academic performance was calculated as 72.621

Notably, we derived the four quadrants successfully based on the mean values of the constructs' importance and performance value. As per Fig. 2, if we increase 1 unit in openness from 68.035 to 69.035, academic performance increases from 72.621 to 73.694. Similarly, if we increased 1 unit in conscientiousness from 32.824 to 33.824, then academic

performance grew to increase from 72.621 to 73.081. Therefore, out of the four determinants of academic performance, the most critical factor was noted to be openness.

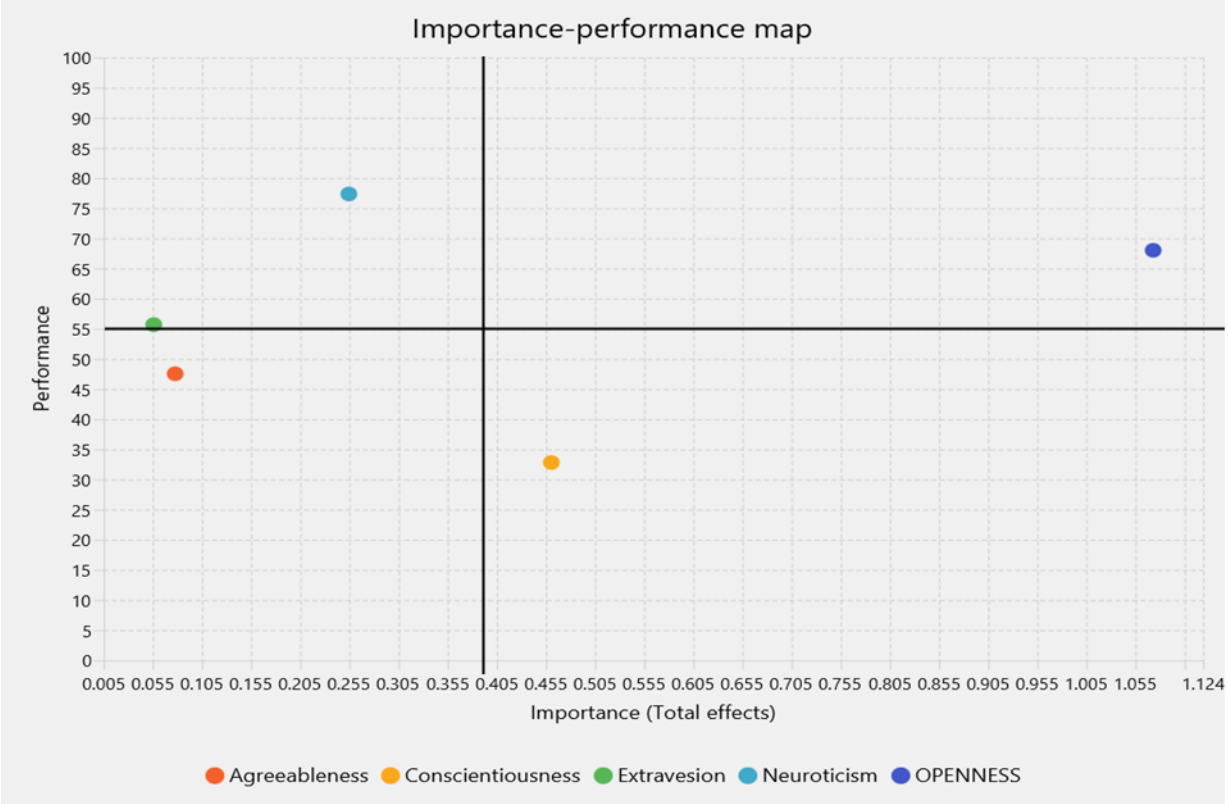


Table 9 - *Necessary Condition Analysis (NCA)-Bottleneck value*

	LV scores - Academic performance	LV scores - Agreeableness	LV scores - Conscientiousness	LV scores - Extraversion	LV scores - Neuroticism	LV scores - Openness
0.00 %	23%	NN	NN	NN	NN	NN
10.00 %	31%	NN	NN	NN	NN	23%
20.00 %	38%	NN	NN	NN	26%	23%
30.00 %	46%	NN	NN	NN	26%	29%
40.00 %	54%	NN	NN	NN	33%	29%
50.00 %	61%	NN	NN	NN	33%	29%
60.00 %	69%	NN	NN	NN	33%	30%
70.00 %	77%	NN	NN	NN	33%	53%
80.00 %	85%	NN	NN	NN	33%	53%

90.00 %	92%	NN	NN	NN	33%	75%
100.00 %	100%	NN	NN	NN	67%	78%

Table no 9 represents Bottleneck value of latent variable using necessary condition analysis (NCA). To achieve 23% academic performance no factor is necessary. Further to achieve 31% academic performance 23% openness is necessary. To achieve 38% of academic performance, 26% of neuroticism and 23% openness are necessary. To achieve 38% academic performance, 26% neuroticism and 29% openness are necessary. To achieve 69% academic performance, 33% of neuroticism and 30% openness are necessary. To achieve 100% academic performance, 67% of neuroticism and 78% of openness are necessary.

Discussion

The findings of this study align well with extant literature highlighting the nuanced role of Big Five personality traits in academic performance among management students in Butwal Sub-Metropolitan City, Nepal. Conscientiousness emerges as a consistently strong and positive predictor of academic success, corroborated by numerous empirical studies that attribute this effect to conscientious individuals' goal setting, organization, persistence, and disciplined work habits which facilitate academic achievement (Meyer et al., 2024; Lechner et al., 2023). Openness to experience also shows a significant positive impact, reflecting its facilitative role in intellectual curiosity and adaptive learning approaches, though its effects may vary depending on contextual and trait-specific nuances, such as learning approach and social skills (John & Srivastava, 2014; Meyer et al., 2024).

Interestingly, neuroticism presents a positive and significant impact on academic performance in this study, which contrasts with many findings in broader literature that often report a negative association due to anxiety and emotional instability detracting from academic success (Amadeo, 2023). However, some recent research suggests that students with moderate neuroticism levels may channel their anxiety into motivation and higher self-efficacy, leading to improved academic outcomes under certain conditions, which could explain the present findings (Amadeo, 2023; recent literature review).

Extraversion and agreeableness, while positively related to academic performance in this study, do not show statistically significant effects. This aligns with mixed findings in the literature where extraversion is sometimes negatively or insignificantly related to academic success, possibly due to social distractions interfering with study time (Seahi Publications, 2023). Agreeableness tends to show a more indirect or context-dependent effect on academic achievement, often mediated by cooperative learning environments and

motivation, but its direct impact may not always reach significance (ScienceDirect, 2017; Hrmars, 2023).

Overall, this pattern suggests that conscientiousness, openness, and under specific circumstances neuroticism, are pivotal traits influencing academic performance in management students, whereas extraversion and agreeableness may exert more subtle or indirect influences in the academic domain.

Conclusion

This study concludes that personality traits play a meaningful role in shaping the academic performance of management students in Butwal, with openness and emotional sensitivity emerging as positive contributors, while conscientiousness, extraversion, and agreeableness showed more complex or weaker effects. The findings emphasize that success is influenced not only by cognitive ability but also by non-cognitive factors interacting with the local educational context. For future stakeholders, educators and institutions are encouraged to integrate personality-aware teaching, mentoring, and counseling practices, while policymakers should consider incorporating personality assessments into higher education frameworks. Future research can broaden the scope by including diverse disciplines, universities, and longitudinal designs to enhance generalizability and provide deeper insights.

Implications

This empirical research on personality traits and academic performance among management students in Butwal Sub-Metropolitan City, Nepal offers valuable theoretical and practical implications. Theoretically, grounding the study in Bandura's Social-Cognitive Theory of Learning (1986) illuminates how students' self-efficacy beliefs and observational learning contribute to their academic achievements, reinforcing the idea that cognitive and social processes interact significantly with personality traits to shape learning outcomes. The Behavioral Activation System (BAS) theory further supplements this by explaining how students' motivational systems drive goal-directed behaviors essential for academic success. The Big Five Model provides a comprehensive lens to understand the distinct influence of traits like conscientiousness, openness, and neuroticism, each exhibiting unique relationships with academic performance, while the Motivation Theory of Curiosity emphasizes the role of intrinsic motivation and intellectual engagement, particularly linked to openness and exploratory learning behaviors.

Practically, these insights underline the importance of tailored educational interventions and student support programs that foster key personality traits conducive to academic

success. For instance, conscientiousness characterized by organization, diligence, and discipline can be nurtured through training in time management, goal setting, and self-regulation strategies. Encouraging openness through pedagogical approaches that stimulate curiosity, creativity, and critical thinking can cultivate students' willingness to engage deeply with course material. The positive association between neuroticism and academic performance suggests that moderate levels of emotional sensitivity may mobilize students' efforts, pointing to the potential of psychological counseling and stress management programs to help students channel anxiety productively. Although extraversion and agreeableness showed less direct impact, their roles in social learning environments suggest benefits in promoting collaborative learning and peer support.

For Nepalese educational institutions, these findings advocate integrating personality assessments into academic advising and curriculum design. Educators should consider personality diversity when developing teaching methods and student engagement strategies to improve academic outcomes effectively. Furthermore, fostering intrinsic motivation and curiosity aligns with the deep learning approach needed for management education, preparing students better for complex problem-solving and adaptive thinking required in the professional world.

In sum, the theoretical frameworks and empirical results collectively emphasize a holistic understanding of how personality traits interact with motivational and cognitive factors to influence academic performance. This understanding can guide more personalized, psychologically informed education policies and practices in Nepal, enhancing not only academic achievement but also the overall development of management students.

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