

The Relationship between Past and Present Leadership Experiences and Personality Factors with the Motivation to Lead among Military Cadets

Ananthan, S.¹, Haslinda, A.¹ and Wong, W.L.¹

¹Faculty of Defence Studies and Management, National Defence University of Malaysia.

Abstract: Leadership skills are acquired through experiential learning. Hence, military cadets are expected to take on leadership roles in academic classrooms, co-curricular activities, military training and within their dormitories to hone their leadership capacities. However, anecdotal evidence suggests that many of the cadets shy away from leadership roles and portray a deficiency in motivation to lead (MTL). Thus, this research endeavoured to determine if personality factors and past and present leadership experiences significantly impacted individual cadet's MTL. Responses were collected from junior cadets at a military training institution through a survey questionnaire and data was analysed using a quantitative method. The findings showed that there was a significant relationship between personality, past and present leadership experiences and MTL. The level of MTL was also determined to be average. However, the type of MTL varied significantly between male and female cadets with a majority of the male cadets possessing the non-calculative MTL while the female cadets indicate a social-normative MTL. The findings of this study have significant practical contributions for the selection of candidates into the Military Training Academy and other institutions where leadership development is a critical output of the organisation.

Key words: *Military Cadets, Leadership, Motivation To Lead, Personality, Leadership Development*

BACKGROUND

Leadership is seen as a combat multiplier in warfare. War studies frequently reveal that good leadership of combat forces at all levels contribute to the success of victorious armies [1]. Consequently, militaries all over the world place a lot of emphasis on building leadership capacities of their officers from the time they take in young people as officer cadets into their military academies [2-4]. These organisations also expend a lot of effort in selecting appropriate candidates into their leadership development programmes to ensure they have the aptitude to learn from the rigorous training to become future leaders.

Due to the important nature of leadership development, research into personal characteristics of potential leaders is seen as crucial and significant. Besides factors such as general intelligence and academic achievement, research indicates that student's leader development is dependent on personality type [5]. Studies on leadership have shown that personality affects the behaviour of a

person and influences the development of a leader's identity [6] and capacity to perform [7]. Surprisingly, such studies have not been undertaken in Malaysia. Thus far studies which have looked into personality factors have focused on how it impacts academic achievement and selection of academic courses [8-10].

On the other hand, Chan and Drasgow [11] in proposing a framework to understand leader development, identified the motivation to lead (MTL) as an important antecedent of leadership performance. Recent research findings by Elprana, Felfe, Stiehl, and Magdalena [12] support the notion that MTL is a particularly good predictor of leadership emergence. Stiehl, Felfe, Elprana and Gatzka [13] suggests that individuals high on MTL benefit more from training by acquiring more leadership competencies, which in turn results in more effective leadership behaviour and ultimately higher training effectiveness.

Like Stiehl, Felfe, et al [13], we assume that those with a strong MTL will take on leadership roles, and

Corresponding Author: Ananthan, S., Senior Lecturer, Leadership, National Defence University of Malaysia, Malaysia, ananthan@upnm.edu.my, +6019-238 5698

in the process, emerge as leaders and be more successful in leadership training. As such, junior cadets at the military training academy who have had prior leadership experiences, are more likely to participate in leadership training, emerge as leaders and take on leadership positions. Consequently, these individuals are the ones who are likely to benefit from the leadership training at the academy. Hence, this study endeavours to determine the relationship between personality factors, past and present leadership experiences with MTL. It takes into cognizance that leadership development is contextual as it occurs in various settings and conditions [14-15].

OBJECTIVES

This study has four main objectives: (1) to determine the level of motivation to lead (MTL) of military cadets; (2) to determine the relationship between past and present leadership experiences with MTL; (3) to determine to what extent past and present leadership and personality factors explain the variance in MTL; (4) to compare the mean level of MTL between male and female cadets. The paper is structured to elaborate the relevant empirical and theoretical evidence supporting the conceptual framework and research hypotheses. It then proceeds to describe the methodology and instrument. Subsequently, the validity and reliability of the measurement scale and hypothesis testing are discussed. Finally, discussion, implications, limitations and future research are elaborated.

LITERATURE REVIEW

Motivation to Lead

The motivation of an individual to take on leadership roles has been identified as a crucial factor in the development of leadership capacity [16-17]. Chan and Drasgow [11] were first to propose the MTL construct. They defined MTL "as an individual-differences construct that affects a leader's or leader-to-be's decisions to assume leadership training, roles, and responsibilities and that affect his or her intensity of effort at leading and persistence as a leader" (p. 482). Stiehl, Gatzka, Elprana and Felfe [14] suggests that MTL is an individual preference in striving for leadership roles. Others who have undertaken research on MTL (Bobbio and Rattazzi [19], Chan, Li, Ho, Chernyshenko, and Sam [20], Neureiter and Traut-Mattausch [21] generally adopt similar definitions.

Generally, there are three motives for someone to take on a leadership role [22]. These motives are categorized as the desire for power, which takes the form of a need to influence and issue orders that are carried out. The second motive is achievement i.e. the need to create something of value and lastly the

desire for affiliation through a deep-rooted aspiration to help others. However, it is quite normal for individuals to be motivated by one or two of these desires. People take on leadership roles if a particular situation satisfies either one or a mixture of these motives. This preference is dependent on those values (power, achievement and affiliation) promoted by a combination of one's culture, personal traits and experience. Situations that allow for the expression of one's personal social motives is most likely to encourage that person's willingness to take leadership responsibility.

However, Chan and Drasgow [11] in proposing the MTL construct, addressed leader motivation by referring to Fishbein and Ajzen's (1975) theory of reasoned action and Triandis's (1980) theory of interpersonal behavior. These theories hypothesized that a person's social behaviour can be determined by the individual's "valences associated with an act (i.e., affect), the person's (calculative) beliefs about the outcomes associated with success and social norms related to the act" (p.482). Hence, this construct is offered in three dimensions which are Affective Identity MTL (Ai-MTL), Non-calculative (Nc-MTL) and Social-Normative (Sn-MTL) [19].

Ai-MTL is characteristic of an individual who relishes leadership roles and positions of power. They prefer taking control when working in a team due to a liking for achievement and competition. Such a person enjoys being in the limelight, is extroverted with a can-do attitude [11] [21]. Persons with Nc-MTL attitudes prefer not to calculate the potential costs that may be incurred in taking on leadership roles. Such costs may include valuable time, resources and loss of friendship [13]. The less one is calculative of costs and benefits, the more likely is the person to take on leadership positions [11]. The Sn-MTL dimension of MTL advocates that some individuals may want to occupy leadership positions out of a sense of duty and honour. They see it as a social obligation not to decline leadership roles as the endeavour contributes to the betterment of the organization [18]. Given this description, Sc-MTL is seen as a characteristic of a person that is extrinsically motivated [11]. In their in-depth study of this construct, they proved empirically, that these three dimensions (Ai-MTL, Nc-MTL and Sc-MTL) were correlated and hence, the existence of a second-order general-MTL construct accounting for the variance between these three dimensions.

Stiehl, Felfe, et al. [13] through a longitudinal research on managers, determined that those individuals high on the MTL scale responded more effectively to leadership training. Similarly, Popper and Mayselless [23] found that MTL was indeed an important individual characteristic that contributed

to leadership development. Hence, this construct is assumed to play a vital role in the study of leadership capacity development amongst military cadets. It is thus necessary to understand the reasons behind what encourages military cadets to act and behave in a certain way, in particular the desire to take on leadership roles.

Personality Traits

Personality is a multidimensional psychological construct that influences many aspects of human behaviour and performances [24]. In recent years, the Big-Five Framework (BFF) of personality has garnered significant support from researchers as a uniting framework for understanding human personality [7], [25-26]. The BFF categorises individual differences in human personality into five empirically established dimensions. These dimensions at the broadest level of abstraction are measured through five bipolar factors i.e. extraversion-introversion, neuroticism-emotional stability, openness-closeness to experience, agreeableness-antagonism and conscientiousness-lack of direction [26-27]. Each of these five dimensions are briefly described as follows: (a) extroversion, traits such as sociability, activity, assertiveness, and positive emotionality; (b) agreeableness, traits such as modest, warmth, kind, trusting, and cooperative; (c) conscientiousness, traits such as thinking before acting, self-control, following norms and rules, and meticulousness; (d) neuroticism, traits such as often feeling anxious, nervous, sad, and tense; and (e) openness to experience (vs. closed-mindedness) describes traits such as willingness to look at new ideas, originality, and creativity [27-28].

Researchers have also generally found that personality traits remain relatively stable over time [18], [29]. This suggests that these traits may be hard to change. However, through a longitudinal study, Hudson and Fraley [30] found that people could modify their personality through their own volition. Studies have also found that people's personality turn towards being more agreeable, emotionally stable and conscientious as they mature biologically [31]. Besides the changes due to maturity in age, continuously adopting a particular social role strengthens certain patterns of thoughts, feelings, and behaviours. Social roles such as being heavily involved in a job leads to increased conscientiousness while being embroiled in a romantic relationship can impact emotional stability [32]. Khairul, Jin and Cooper [33] suggest that cultural values and background could also significantly impact an individual's personality. Their cross-cultural research suggests that when compared to American students, Malay university

students scored higher on the agreeableness dimension but lower on the extraversion and openness to experience dimensions.

In relation to leadership, a comprehensive meta-analytical study by Judge, Bono, Ilies and Gerhardt [34] found that BFF was indeed a good predictor of leadership. Their analysis of various studies determined that BFF had a high correlation score of 0.39 with leader effectiveness especially extroversion and conscientiousness. Dimensions of agreeableness, openness to experience, and neuroticism, are less consistent indicators due to effects of study setting and context. On the other hand, Judge et al. [34] determined that in predicting leadership in a military setting, only neuroticism, extraversion, and conscientiousness had a significant impact on leader effectiveness. Van Iddekinge, Ferris and Heffner [35] through their study on US Army personnel, found that personality dimensions of extraversion, conscientiousness and emotional stability indeed predicted Ai-MTL. Other studies suggest that Ai-MTL was associated with agreeableness and extraversion [11]. Military cadets high on the conscientiousness and agreeableness were found to be more likely to perform better in leadership roles [36] while openness to experience was judged not to be an indicator of leadership in the military where adherence and obedience to established orders and rules was required [37].

Past and Present Leadership Experience

Leadership development is a process that requires not only knowledge, but also time and experience [15]. Dugan (as cited in [38]) suggests that leadership is learned through experience and interaction with groups of people sharing common identities. According to Hirst, Mann, Bain, Pirola-Merlo and Richver [39] young leaders who have had experience in leadership are expected to learn more from leader development training though not all will learn at the same rate. Hence, it is imperative that the process for development begins as early as possible [40]. Accordingly, Chan and Drasgow [11] defined past leadership experience in terms of quantity and quality of previous involvements in leadership roles. Participation in leadership roles enhances the motivation to lead and learn more about leading [41]. However, an initial survey undertaken by the researchers of this study indicate that past leadership experience is not a vital criterion for recruitment of military cadets. Candidates are only selected based on their potential for academic study and capacity to endure the tough and rigorous training. The system expects the cadets to acquire leadership capacity progressively by participating actively in co-curriculum activities and military training.

Conceptual Framework and Hypothesis

The literature reviewed thus far forms the foundation for the development of the conceptual framework for the study as shown in Figure 1 below

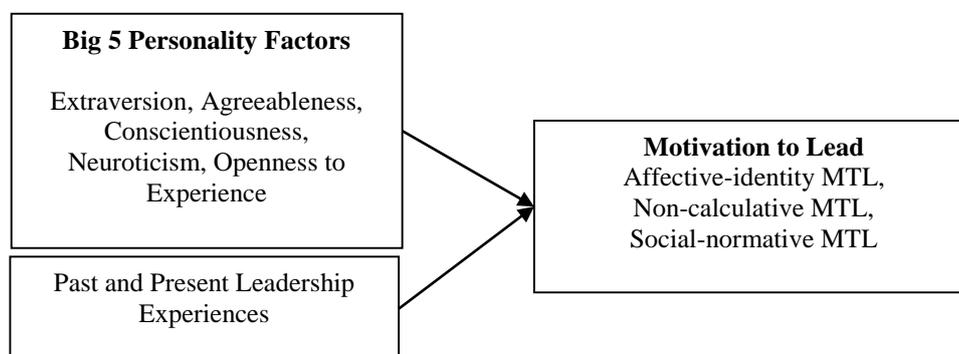


Figure 1: Conceptual Framework of the Study

Based on the literature review and conceptual framework, it can be hypothesised that:

- H1: Extraversion will be positively associated with MTL.
- H2: Agreeableness will be positively associated with MTL.
- H3: Conscientiousness will be positively associated with MTL.
- H4: Neuroticism will be negatively associated with MTL.
- H5: Openness to Experience will be positively associated with MTL.
- H6: Past and Present Leadership Experiences will be positively associated with MTL.
- H7: There is a difference in the MTL between male and female cadets.

RESEARCH METHODOLOGY

Instrument Development

In the past, researchers into personality have had a difficult time grappling with multiple personality measuring instruments. Coupled with that, the measurement of personality construct as a psychological variable required long inventories [25]. A survey of literature indicates the availability of several instruments to measure personality in accordance with the Big Five Framework. These instruments, range from Costa and McCrae's (1992) NEO Personality Inventory-Revised (NEO-PI-R, 240-item), Goldberg's (1992) Trait Descriptive Adjectives (TDA, 100-item), Goldberg's (1999) International Personality Item Pool—Five-Factor Model measure (IPIP, 50-item), John and Srivastava's [27] Big Five Inventory (BFI, 44-item). These instruments can take time periods between 5 to 15 minutes to complete them [27]. There are short versions to measure personality factors such as the Ten-Item Personality Inventory (TIPI) [26, 42] and the Mini-IPIP, a 20-item short version of the 50-item IPIP [43]. However, for the purpose of this study, a 20-item instrument adapted from the original BFI (44-item) developed by John and Srivastava [27] was used. The usage of this shortened scale helped eliminate item redundancy with limited time for survey participants. Furthermore, this scale was

selected as it retained significant levels of reliability and validity as well as acceptable psychometric properties similar to the original instrument.

The instrument was translated into the Malay language as it was the language easily understood by the respondents. A pilot study was conducted using respondents from a senior group of military cadets. Results of the study was used to improve the actual instrument used for the research. The survey questionnaire had three sections. As usual the first section captured the demographic data. The second section contained the selected 20 items of BFI [27]. The third section used four items to measure past leadership experience developed based on existing literature [44]. The last section contains 12 items to measure MTL, adopted from scales developed by Chan and Drasgow [11]. Only four items from the original nine items were adopted for each of the three dimensions of Ai-MTL, Nc-MTL and Sn-MTL to ensure brevity and cater for the limited time allocated for the survey. All items were measured using a 5-category scale ranging from "very strongly disagree" (1) to "very strongly agree" (5).

Research Design

Data was collected using a "one-shot" cross-sectional method through a self-completion questionnaire. The advantage of such a research

design is that it enables the gathering of accurate, less biased and high quality data [45-46]. The unit of analysis for this study was the individual military cadets from the junior and senior cohorts. The researchers had obtained official approval to conduct the study from the head of the Military Training Academy. Considering the constraints of the gathering the cadets using a random sampling frame, the convenience sampling method was used instead. From a population of 298 juniors a total of 230 subjects participated in the survey, thus yielding a 77 percent response rate.

The instrument was group-administered personally by the researchers in a lecture hall, where necessary

information was provided to the cadets before they participated in the survey. According to Sekaran and Bougie [46], personally administered questionnaire instruments have several advantages as follows: (a) rapport could be established and respondents motivated to answer questions thoughtfully and diligently; (b) opportunity to clarify doubts and in the process obtain more accurate responses; (c) obtain almost a 100% response; and (d) respondents' doubt about their anonymity is alleviated and hence provide feedback without apprehension. In the course of this research, all the advantages listed above were pleasantly evident. Through the questionnaire data collection process, usable responses from 227 junior cadets were gathered.

Table 1: Factor Loadings of Items

PPLX	Extraversion	Agreeableness	Conscientiousness	Neuroticism	Openness	MTL
.811	.869	.791	.878	.805	.803	.823
.798	.852	.686	.843	.794	.806	.802
.732	.781	.609	.762	.785	.736	.723
.431	.506	.590	.670	.546	.598	.765
						.735
						.721
						.649
						.634
						.624
						.600
						.562
						.545

Table 2: Means, Standard Deviations, Correlations among Study Variables.

Variables	Mean	SD	Y	X1	X2	X3	X4	X5	X6
MTL(Y)	3.30	.48	(.75)						
Extraversion (X ₁)	3.44	.72	.452**	(.81)					
Agreeableness (X ₂)	3.59	.52	.174**	-0.210	(.67)				
Conscientiousness (X ₃)	3.32	.73	.412**	0.595	-0.166	(.86)			
Neuroticism (X ₄)	2.90	.76	-.366**	0.437	-0.395	0.411	(.84)		
Openness (X ₅)	3.39	.84	.062	0.170	-0.359	0.179	-.038	(.77)	
PPLX (X ₆)	3.01	.72	.449**	.351**	.058	.259**	-.297**	.105	(.82)

Notes: N=227. Cronbach's alphas are in parentheses. PPLX=Past and Present Leadership Experience.

p* < .05, *p* < .01

DATA ANALYSIS AND FINDINGS

The values of Cronbach's alpha for the variables, namely past and present leadership experiences, extroversion, agreeableness, conscientiousness, neuroticism, openness, and MTL ranged from 0.67 to 0.86, indicating that the constructs satisfactorily

met the standards of reliability analysis. Furthermore, in order to identify the underlying structure of various measures, exploratory factor analysis using principle components of factor extraction and varimax rotation techniques were performed. It was found that one item in the past and present leadership experience indicated a low

correlation with all items and this was subsequently removed. Most factor loadings were above 0.50, thus indicating a high level of significance (see Table 1).

The relationship between extraversion (X₁), agreeableness (X₂), conscientiousness (X₃), neuroticism (X₄) openness (X₅) and MTL (Y), was investigated using Pearson product-moment correlation coefficients. Preliminary analyses were performed to ensure no violation of the assumptions of normality and linearity. The results shown in Table 2 depicts the mean score, SD and correlation values among study variables.

On the whole, Hypotheses 1 to 6 of this research are supported with each bivariate relationship varying in terms of nature, direction and significance. As depicted in Table 2, the strongest linear relationship is found between extraversion (X₁) and MTL (Y) (r=.452, p = .01). The positive correlation coefficient indicates that as the score of extraversion increases, so too does the score of MTL. This finding clearly supports the research hypothesis that there is a

positive association between extraversion and MTL. Similarly, as hypothesised, a moderate association is also found between conscientiousness and MTL (r=.412, p = .01) and a negative association between neuroticism and MTL (r= -0.366, p = .01). These findings collective support the conjectured hypotheses (H1, H3 and H4). The associations of agreeableness and MTL (r= .174, p = .01) and openness and MTL (r= .062, p = .01) are low and negligible. The last variable, PPLX has a moderate relationship with MTL (r=.449, p = .01).

The R-squared value of 0.336 obtained implies that the five predictor variables explain about 33.6% of the variance in the MTL (Y) and this variance is considered to be moderate. The F-statistics [$F(5, 221) = 22.408$] is very large and the corresponding p-value is highly significant (p = 0.001). This indicates that the slope of the estimated linear regression model line is not equal to zero confirming that the proposed five-predictor/factor multiple linear regression model of the study is highly significant.

Table 3: The Impact of Big Five Personality Traits on MTL

MTL (Y)	B (Unstandardized Coefficients)	Std. Error	Beta (Standardized Coefficients)	t	p-value
Constant	1.852	.326		5.677	.000
Extraversion (X ₁)	.214	.040	.321	5.413	.000
Agreeableness (X ₂)	.068	.051	.074	1.324	.187
Conscientiousness (X ₃)	.190	.039	.289	4.896	.000
Neuroticism (X ₄)	-0.096	.038	-0.153	-2.510	.013
Openness (X ₅)	.033	.032	.058	1.036	.301

Notes: $R = 0.580$, $R^2 = 0.336$, $Adj. R^2 = 0.321$; $F(5, 221) = 22.408$, $p = .0001$

Predictors: (Constant), Extraversion, Agreeableness, Openness, Conscientiousness, Neuroticism

As depicted in Table 3, the largest beta coefficient obtained is 0.321 for extraversion (X₁) and this corresponds with the highest t-statistic (5.413). This means the variable makes the strongest unique contribution in explaining the variance in the dependent variable MTL (Y), when all other

predictor variables in the model are controlled. Extraversion is followed by conscientiousness (X₂) as the second strongest contributor in explaining the variance in MTL (Y) with a beta coefficient of 0.289.

Table 4: Group Statistics of MTL by Gender

Gender	N	Mean	Std. Deviation	Std. Error Mean
Male	186	3.2923	.47521	.03484
Female	41	3.2207	.49876	.07789

Comparison of Level of Motivation to Lead

The Independent samples t-test was used to determine if there was any significance difference in the level of MTL between male and female cadets.

It is assumed that personality and environmental factors may have an impact in the MTL of these two distinct groups. The data obtained was analysed and is reported in Table 4 and 5.

Table 5: Independent Samples T-Test

	Levene's Test for Equality of Variances		T-test for Equality of Means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Equal variances assumed	.043	.836	-.465	225	.643	-0.04305	.08273
Equal variances not assumed			-.450	57.116	.654	-0.04305	.08533

As depicted in Table 4, the mean MTL score for male cadets is higher ($M = 3.2923, SD = .47521$) than female cadets ($M = 3.2207, SD = .49876$). The Levene’s test ($F = .043, p = .836$) shows a p -value of 0.836 (greater than 0.05), implying that the groups have equal variance of mean MTL scores for male and female employees (hence, the first line is to be considered for interpretation). Based on the T-test for equality of means ($t = -0.043, t \geq 1.96$), the T-statistic obtained was rather small and the corresponding, p -value obtained ($p = .643$) was very much larger than the alpha value of 0.05 for significance. Hence H7, which conjectured a difference in the MTL of male and female cadets is not supported.

CONCLUSION AND IMPLICATIONS

Big Five personality factors of extraversion, agreeableness, conscientiousness, neuroticism and openness to experience indeed plays an important role in influencing the desire (motivation) to lead. However past studies, especially in a military setting do not fully agree as to which typology of personality consistently impacted MTL. While Judge et al. [34] and Van Iddekinge et al. [35] through separate studies found neuroticism, extraversion, and conscientiousness traits as likely predictors of leadership effectiveness in a military setting, Chan and Drasgow [11] determined that Ai-MTL was most likely to emanate from individuals with agreeableness and extraversion. Similarly, the results are in conflict with earlier findings from abroad as this research found MTL to be most significantly impacted by extraversion and conscientiousness. As Day [15] advocates, leadership development needs to be viewed and undertaken with the context of culture and environment in mind.

Military cadets need to be developed as leaders from the moment they sign up to serve the armed forces. Experiencing leadership has been determined as one of the best ways to grow as leaders. Hence, to be able to acquire the knowledge and skills through the curriculum, military cadets must show a desire to participate in leadership roles. Those with a particular type of MTL (Ai-MTL) has been found to portray a greater propensity to take on leadership positions. Personality traits such as extraversion and conscientiousness has been ascertained to drive positive motivations to participate in leadership activities as opposed to those with open, agreeable and neurotic department. The other findings from this study is that those with self-perceived efficacy for leadership obtained through past leadership experiences, also showed a greater motivation for leadership tasks. Given these findings, military academies and other similar institutions that are focused on accelerating leader development within their campuses, may include assessment of personality in their selection process.

This study has several limitations as usually experienced by other empirical enquiries. First is the reliance on self-report data which could actually be inflated responses of one’s true evaluation. Secondly, it a one-shot, cross-sectional study and as such causal relationships cannot be established. Hence, personality factors can only predict leadership motivation but cannot be determined to cause it. Thirdly, only two potential antecedents (personality and past leadership experience) were investigated. There could be other sources of influence on a cadet’s MTL such as organisational climate [47]. Lastly, the determination of personality was solely based on the broad BFF framework. Bartone et al. [7] criticized the BFF framework as being too general to measure personality factors to predict important outcomes. As such, other narrower

personality measures such as the Myers-Briggs Type Indicator® (MBTI) could be investigated to help determine MTL in the future. Future studies should look into item wording and development of items, especially regarding those dimensions with low acceptable reliability coefficients (lower than .70). The findings also suggest that a longitudinal study on the junior cohort is essential to determine if changes to their MTL and personality occur as a result of the current leader development programme.

ACKNOWLEDGEMENT

The authors are grateful for financial support from National Defence University of Malaysia's Short-term Grant UPNM/2015/GPJP/SS1/7 to undertake this research.

REFERENCES

- [1] UK Ministry of Defence. (2012). *Developing Leaders: A British Army Guide*. Camberley, U.K. Retrieved from https://www.army.mod.uk/documents/general/rmas_ADR002383-developingLeaders.pdf
- [2] Boe, O. (2015). Developing leadership skills in Norwegian military officers: Leadership proficiencies contributing to character development and officer competency. *Procedia - Social and Behavioral Sciences*, 186, 288–292. <https://doi.org/10.1016/j.sbspro.2015.04.017>
- [3] Crandall, D. (Ed). (2006). *Leadership Lessons from West Point*. San Francisco, CA: Jossey-Bass.
- [4] Pugsley, C. & Holdsworth, A. (2006). *Sandhurst: A tradition of leadership*. London, UK: Third Millenium Publishing.
- [5] Steinmayr, R., & Spinath, B. (2008). Sex differences in school achievement: What are the roles of personality and achievement motivation? *European Journal of Personality*, 22(3), 185-209.
- [6] Johansen, R. B., Laberg, J. C., & Martinussen, M. (2013). Military identity as predictor of perceived military competence and skills. *Armed Forces & Society*, 40 (published online 28 May 2013), 521–543. <https://doi.org/10.1177/0095327X13478405>
- [7] Bartone, P. T., Eid, J., Johnsen, B. H., Laberg, J. C., & Snook, S. A. (2009). Big five personality factors, hardiness, and social judgment as predictors of leader performance. *Leadership & Organization Development Journal*, 30(6), 498–521. <https://doi.org/10.1108/01437730910981908>
- [8] Khairul, A.M. (2003). Personality traits and gender differences in the selection of academic major among Malay students. *Jurnal Pendidikan*, 28, 3-13.
- [9] Khairul, A. M., Firdaus, M. H., Yaacob, N. R., & Khamisah, J. (2007). Personality profiles of engineering students. *World Transactions on Engineering and Technology Education*, 6(2), 133–138.
- [10] Lim, P. S., Melissa, N., & Abdullah, L. Y. (2012). Relationship between Big-Five personality domains and students' academic achievement. *Pertanika Journal of Social Science and Humanities*, 20(4), 973–988.
- [11] Chan, K.-Y., & Drasgow, F. (2001). Toward a Theory of Individual Differences and Leadership: Understanding the Motivation to Lead. *Journal of Applied Psychology*, 86(3), 481–498. <https://doi.org/10.1037//0021-9010.86.3.481>
- [12] Elprana, G., Felfe, J., Stiehl, S., & Magdalena, G. (2015). Exploring the sex difference in affective motivation to lead: Furthering the understanding of women's underrepresentation in leadership positions. *Journal of Personnel Psychology*, 14(3), 142–152. <https://doi.org/10.1027/1866-5888/a000137>
- [13] Stiehl, S. K., Felfe, J., Elprana, G., & Gatzka, M. B. (2015). The role of motivation to lead for leadership training effectiveness. *International Journal of Training and Development*, 19(2), 81–97. <https://doi.org/10.1111/ijtd.12051>
- [14] Clinton, J. R. (1988). *The Making of a Leader*. Colorado Springs, CO: Navpress.
- [15] Day, D. V. (2001). Leadership development: A review in context. *Leadership Quarterly*, 11(4), 581–613.
- [16] Jeung, W., & Harms, P. (2013). Leader emergence in teams: The role of leadership self-efficacy and motivation to lead. *Academy of Management Proceedings*, 2013(1), 14340–14340. <https://doi.org/10.5465/AMBPP.2013.14340abstract>
- [17] Waldman, D. A., Galvin, B. M., & Walumbwa, F. O. (2013). The development of motivation to lead and leader role identity. *Journal of Leadership & Organizational Studies*, 20(2), 156–168. <https://doi.org/10.1177/1548051812457416>
- [14] Stiehl, S. K., Gatzka, M., Elprana, G., & Felfe, J. (2015). Personality and leadership intention: The mediating role of motivation to lead in careers. *Organisational Psychology*, 59(4), 188–205. <https://doi.org/doi:10.1026/0932-4089/a000185>.
- [19] Bobbio, A., & Rattazzi, A. M. (2006). A contribution to the validation of the motivation to lead scale (MTL): A research in the Italian context. *Leadership*, 2(1), 117–129. <https://doi.org/10.1177/1742715006057240>

- [20] Chan, K. Y., Li, Y., Ho, M. R., Chernyshenko, O., & Sam, Y. L. (2013). Affective, non-calculative and social motivation to lead: What we know from studies of entrepreneurial, professional & leadership motivation. In *16th Congress of the European Association of Work and Organizational Psychology, 22-25 May 2013*. Münster, Germany. <https://doi.org/10.13140/2.1.1799.5529>
- [21] Neureiter, M., & Traut-Mattausch, E. (2016). An inner barrier to career development: Preconditions of the impostor phenomenon and consequences for career development. *Frontiers in Psychology*, 7(48), 1–15. <https://doi.org/10.3389/fpsyg.2016.00048>
- [22] Manning, G., & Curtis, K. (2012). *The Art of Leadership*, 4th ed. Singapore: McGraw-Hill.
- [23] Popper, M., & Mayselless, O. (2007). The building blocks of leader development: A psychological conceptual framework. *Leadership & Organization Development Journal*, 28(7), 664–684. <https://doi.org/10.1108/01437730710823905>
- [24] Barrick, M. R., Stewart, G. L., & Piotrowski, M. (2002). Personality and job performance: Test of the mediating effects of motivation among sales representatives. *Journal of Applied Psychology*, 87(1), 43–51. <https://doi.org/10.1037//0021-9010.87.1.43>
- [25] Brust, O. A., Hader, S., & Hader, M. (2016). Is the short version of the big five inventory (BFI-S) applicable for use in telephone surveys? *Journal of Official Statistics*, 32(3), 601–618. <https://doi.org/10.1515/JOS-2016-0031>
- [26] Gosling, S. D., Rentfrow, P. J., & Swann, W. B. (2003). A very brief measure of the Big-Five personality domains. *Journal of Research in Personality*, 37(6), 504–528. [https://doi.org/10.1016/S0092-6566\(03\)00046-1](https://doi.org/10.1016/S0092-6566(03)00046-1)
- [27] John, O. P., & Srivastava, S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. *Handbook of Personality: Theory and Research*, 2(510), 102–138. <https://doi.org/citeulike-article-id:3488537>
- [28] Lucas, R.E. & Donnellan, M.B. (2010). “Personality measures for the British household panel study”. In *British Household Panel Survey User Manual: Introduction, Technical Report, and Appendices* Taylor, M.F., J. Brice, N. Buck, & E. Prentice-Lane (Eds.). Colchester, UK: University of Essex. pp. A3-22 to A3-25.
- [29] Cobb-Clark, D., & Schurer, S. (2011). *The stability of Big-Five Personality Traits*. Retrieved from <http://ftp.iza.org/dp5943.pdf>
- [30] Hudson, N. W., & Fraley, R. C. (2015). Volitional personality trait change: Can people choose to change their personality traits? *Journal of Personality and Social Psychology*, 109(3), 490–507. <https://doi.org/10.1037/pspp0000021>
- [31] Bleidorn, W., Kandler, C., Riemann, R., Spinath, F. M., & Angleitner, A. (2009). Patterns and sources of adult personality development: growth curve analyses of the NEO PI-R scales in a longitudinal twin study. *Journal of Personality and Social Psychology*, 97(1), 142–155. <https://doi.org/10.1037/a0015434>
- [32] Lodi-Smith, J., & Roberts, B. W. (2007). Social investment and personal-ity: A meta-analysis of the relationship of personality traits to investment in work, family, religion, and volunteerism. *Personality and Social Psychology Review*, 11, 68–86. <http://dx.doi.org/10.1177/1088868306294590>
- [33] Khairul, A. M., Jin, P., & Cooper, M. (2000). Malay culture and personality: A Big Five perspective. *American Behavioral Scientist*, 44(1), 95–111. <https://doi.org/10.1177/00027640021956116>
- [34] Judge, T. A., Bono, J. E., Ilies, R., & Gerhardt, M. W. (2002). Personality and leadership: A qualitative and quantitative review. *Journal of Applied Psychology*, 87(4), 765–780. <https://doi.org/10.1037//0021-9010.87.4.765>
- [35] Van Iddekinge, C. H., Ferris, G. R., & Heffner, T. S. (2009). Test of a multistage model of distal and proximal antecedents of leader performance. *Personnel Psychology*, 62(3), 463–495. <https://doi.org/10.1111/j.1744-6570.2009.01145.x>
- [36] Maddi, S.R. (2007). Relevance of hardiness assessment in training to the military context. *Military Psychology*, 19, 61-70.
- [37] Ng, K.-Y., Ang, S., & Chan, K.-Y. (2008). Personality and leader effectiveness: A moderated mediation model of leadership self-efficacy, job demands, and job autonomy. *The Journal of Applied Psychology*, 93(4), 733–43. <https://doi.org/10.1037/0021-9010.93.4.733>
- [38] Guthrie, K. L., Bertrand, J. T., Osteen, L., & Hu, S. (2013). Cultivating leader identity and capacity in students from diverse backgrounds. *ASHE Higher Education Report*, 39(4). <https://doi.org/10.1002/aehe.20010>
- [39] Hirst, G., Mann, L., Bain, P., Pirola-Merlo, A., & Richver, A. (2004). Learning to lead: The development and testing of a model of leadership learning. *Leadership Quarterly*, 15(3), 311–327. <https://doi.org/10.1016/j.leaqua.2004.02.011>
- [40] Warnick, G. M. (2014). An experiential learning approach to develop leadership competencies in engineering and technology students’ leadership. In *121st ASEE Annual Conference & Exposition*. American Society for Engineering Education. pp. 1–14.
- [41] Day, D. V., Harrison, M. M., & Halpin, S. (2009). *An Integrative Approach to Leader Development: Connecting adult development, identity, and expertise*. New York, NY: Routledge.

- [42] Rammstedt, B., & John, O. P. (2007). Measuring personality in one minute or less: A 10-item short version of the Big Five Inventory in English and German. *Journal of Research in Personality*, 41, 203–212. <https://doi.org/10.1016/j.jrp.2006.02.001>
- [43] Donnellan, M. B., Oswald, F. L., Baird, B. M., & Lucas, R. E. (2006). The Mini-IPIP scales: Tiny-yet-effective measures of the Big Five Factors of personality. *Journal of Psychological Assessment*, 18(2), 192–203. <https://doi.org/10.1037/1040-3590.18.2.192>
- [44] Bobbio, A., & Manganelli, A. M. (2009). Leadership self-efficacy scale. A new multidimensional instrument. *TPM - Testing, Psychometrics, Methodology in Applied Psychology*, 16(1), 3–24.
- [45] Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Thousand Oaks, CA: Sage Publications.
- [46] Sekaran, U., & Bougie, R. (2013). *Research Methods for Business: A skill-building approach* 6th ed. West Sussex, UK: John Wiley and Sons Ltd.
- [47] Klein, K. J., & Ziegert, J. C. (2004). “Leader development and change over time: A conceptual integration and exploration of research challenges”. In *Leader Development for Transforming Organizations: Growing Leaders for Tomorrow* D. Day, S. J. Zaccaro, & S. M. Halpin (Eds.), Mahwah, NJ: Lawrence Erlbaum Associates, Inc. pp. 359–382.