The relationship of Personality Traits and Academic and Social Self-Efficacies of Learning Disabilities (LD) Learners

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ABSTRACT

This paper examined the relationship between Big Five personality traits (OCEAN) and academic and social self-efficacies of learning disabilities (LD) learners. A total of 89 LD learners aged 10 to 19 years old completed questionnaires measuring Big-Five personality traits (International Personality Item Pool, IPIP), academic self-efficacy (Academic Efficacy scale from the Manual for the Patterns of Adaptive Learning Scales, MPAL), and social self-efficacy (Social Competence Rating Scale for Children, SCRSC). Pearson correlation shows that personality traits that have a significant relationship with academic and social self-efficacies were openness, conscientiousness, extraversion, and agreeableness while neuroticism does not have a significant relationship with both academic and social self-efficacies. Implications for future intervention are also being discussed.

KEYWORDS

1.   Introduction

United Nations International Children's Fund (UNICEF) estimates that approximately 93 million children live with a moderate or severe disability worldwide (UNICEF, 2013). In Malaysia, the Department of Social Welfare (DSW) reported the number of people registered as disabled was 494,074 in 2013 and 531,962 in 2014, marking an increase of 37,888 registrations over the course of the year (Department of Social Welfare, 2014). According to UNICEF (2017), it can be estimated that 1.5% of the total Malaysian population are people living with disabilities, however, this is likely to be a conservative estimation. The latest data available, Department of Social Welfare (2014) reported that 35 % of the disabilities population are registered as learning disabilities (LD), which is the highest percentage as compared to physical, hearing, vision, mental, speech, and other disabilities.

Learning disability is an unseen neurological impairment that influences the ability of the brain of oneself to receive, process, store, and respond to information (Karmvir, 2015). Thus, it affects individuals' ability to perform general academic tasks such as reading, writing, listening, and mathematical calculations (Crane, Zusho, Ding, & Cancelli, 2017). These skills are crucial to school's success, work, and for coping with life in the community (Karmvir, 2015).

Thus, the academic well-being of LD learners is not neglected by Ministry of Education as stated in Malaysia Education Blueprint 2013 – 2025 (Malaysia Education Blueprint, 2013). Anyhow, the overall performance of LD learners in relations to the ability to read, write, and count especially in self-contained special education classroom that known as Integrated Special Education Program (PPKI) is still low as compared to their typically developing (TD) peers in the mainstream classroom (Kuldas, Sinnakaudan, Hashim, & Ghazali, 2016). Many factors contributed to the findings such as their cognitive abilities (Raghubar & Barnes, 2016), other problems that coexist with learning disabilities (Karmvir, 2015), and personality (D. Brown & Cinamon, 2016).

Big Five personality trait that consisted of five habitual behaviours is empirically established to play an influential role in individuals' behaviour (Stajkovic, Bandura, Locke, Lee, & Sergent, 2018). The five factors that defined as an inborn traits are openness to experience (O), conscientiousness (C), extraversion (E), agreeableness (A), and neuroticism (N), which in turn vary across individuals depend on the activities, social environment, and time (Costa & McCrae, 1992). Openness to experience (O) is defined as the inclination of oneself to be open to new feelings, thoughts, and values; conscientiousness (C) is the tendency to be organized, achievement- focused, and disciplined; extraversion (E) defined as the tendency to be friendly, cheerful, social, and energetic; agreeableness, the tendency to be sympathetic, kind,

trusting, and cooperative; neuroticism (N) as the tendency to be resilient to negative emotions such as anxiety (Lipnevich, Preckel, & Krumm, 2016).

In an educational setting, the role of five personality traits in academic success is widely studied by many researchers (Angelkoska, Stankovska, & Dimitrovski, 2016). According to Jensen (2015), the prepotent traits of individuals personality is remarkably influenced the academic success apart from the role of curriculum factors. Thus, individual differences in personality traits affect how learners approach learning materials and process it: as a consequence, achieve different learning outcomes (Spinath, Eckert, & Steinmayr, 2014). As a result, previous researchers aim to define the influence of Big Five personality traits in various domain of academic (Heaven & Ciarrochi, 2012; Kaufman et al., 2016; Levpušček, Zupančič, & Sočan, 2013; Perera, Mcilveen, & Oliver, 2015).

Levpušček, Zupančič, and Sočan (2013) concluded that openness and conscientiousness were positively significant predictors of learners' grades in mathematics. Similarly, in another longitudinal study by Heaven and Ciarrochi (2012) also supported the role of openness and conscientiousness in mathematics. Anyhow for arts and science, openness is the only trait that plays a significantly positive role in relation to performance in particular subjects (Kaufman et al., 2016). In addition, academic and social self-efficacies arev also crucial as it affects academic performance (Dunbar, Dingel, Dame, Winchip, & Petzold, 2016; Wilson, Zheng, Lemoine, Martin, & Tang, 2016).

Self-efficacy refer to a decision made by people about their abilities establish actions to accomplish given goals. The literature documents widely the prevalent influence of self-efficacy beliefs on motivation and performance, directly and indirectly, and across various areas of functioning (Bandura, 1986, 1997). In the academic domain, the role of perceived self-efficacy has been examined at the levels of learners, teachers, and faculties (Bandura, 1997; Pajares & Urdan, 2006; Schunk & Pajares, 2002). Brubacher, McMahon, and Keys (2018) stated that high in both self-efficacies are associated with lower level of anxiety that helps learners to demonstrated better academic's performance.

However, there is a lack of study about personality in relation to academic and social self-efficacies for LD learners as all of the aforementioned studies mainly focus on TD peers, high schools, and university learners. In light of the issues that could impact the learning of LD learners, the study that empirically testing the relationship between these variables is therefore warranted. Hence, the current study aims to investigate the relationship of Big-Five personality traits (OCEAN) and academic and social self-efficacies among LD learners.

Findings from the current study may have an important implication for intervention aiming to help LD learners to enhance their beliefs in their ability or self-efficacy, specifically in the academic and social domain. Teachers need to aim in developing personality traits that contributed to academic and social self-efficacies enhancement. Thus, these will contribute to the enhancement of academic and social abilities of LD learners.

The question that leads the investigation was: Are there relationships of openness (O), conscientiousness (C), extraversion (E), agreeableness (A), neuroticism (N) and academic and social self-efficacies of LD learners? Based on the aforementioned relevant evidence and research question, the following ten hypotheses are put forward (see Figure 1);

H1: There is a statistically significant relationship between openness (O) and academic self-efficacy of LD learners.

H2: There is a statistically significant relationship between openness (O) and social self-efficacy of LD learners.

H3: There is a statistically significant relationship between conscientiousness (C) and academic self-efficacy of LD learners.

H4: There is a statistically significant relationship between conscientiousness (C) and social self-efficacy of LD learners.

H5: There is a statistically significant relationship between extraversion (E) and academic self-efficacy of LD learners.

H6: There is a statistically significant relationship between extraversion (E) and social self-efficacy of LD learners.

H7: There is a statistically significant relationship between agreeableness (A) and academic self-efficacy of LD learners.

H8: There is a statistically significant relationship between agreeableness (A) and social self-efficacy of LD learners.

H9: There is a statistically significant relationship between neuroticism (N) and academic self-efficacy of LD learners.

H10: There is a statistically significant relationship between neuroticism (N) and social self-efficacy of LD learners.

Figure 1: *Theoretical base model: Relationship of personality traits with academic and social self-*
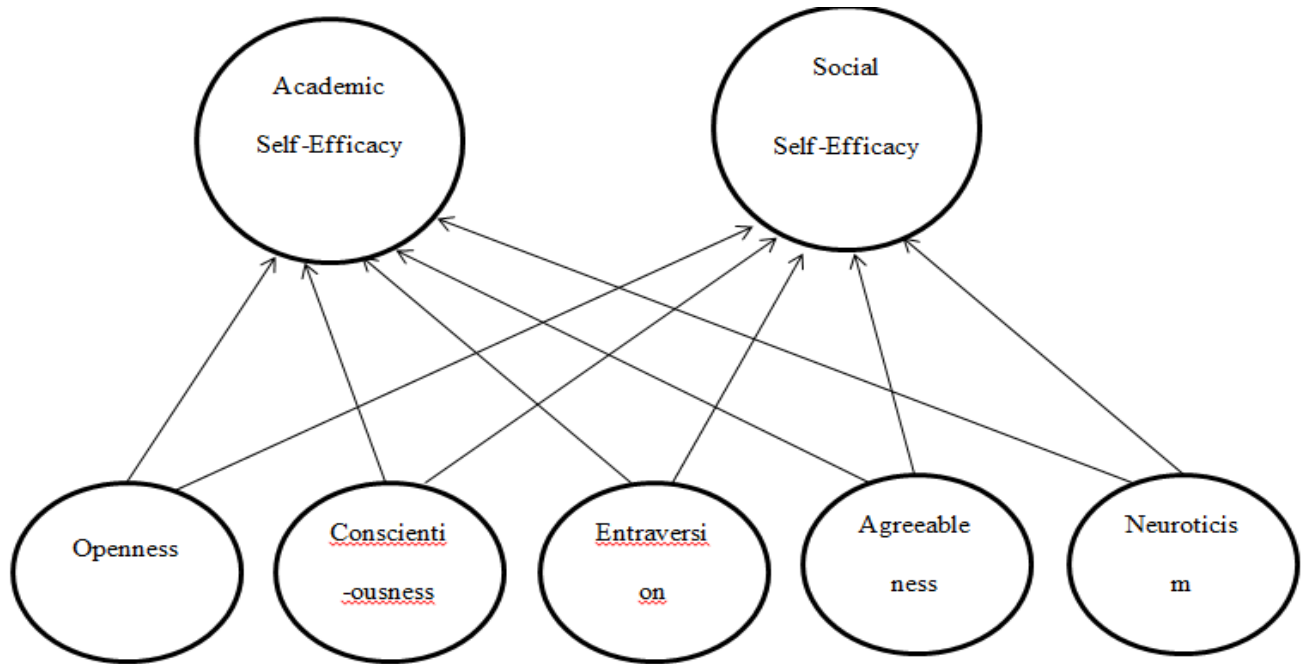
efficacies of LD learners

2.   **Literature Review**

Personality is an individual outward appearance (Schultz & Shultz, 2009). In this research, personality is based on Big Five traits or five dimensions which are Openness to experience, Conscientiousness, extraversion, Agreeableness and Neuroticism. Big Five traits personality consisted five habitual behaviours that proved to play an influential role in individuals' behaviour (Stajkovic, Bandura, Locke, Lee, & Sergent, 2018). The five factors that defined as inborn traits are openness to experience (O), conscientiousness (C), extraversion (E), agreeableness (A), and neuroticism (N), which in turn vary across individuals depend on the activities, social environment, and time (Costa & McCrae, 1992). Openness to experience (O) is defined as the inclination of oneself to be open to new feelings, thoughts, and values; Openness to experience is the willingness level of an individual to adapt to new experience, new environment and new atmosphere. (Goldberg 1993; Mc Crae & John, 1992) Individual with this trait will show interest in new things and experience and it will make them more imaginative, sensitive, and has the desire to know new things and gain knowledge. (Costa & McCrae, 1992). Conscientiousness (C) is the tendency to be organized, achievement-focused, and disciplined; Conscientiousness is about orderliness,

willpower and motivation to achieve new target or goal. This trait shows that someone is organized, comprehensive and plan with his or her conscience. Previous researchers show that this trait is the deciding factor in an individual working achievement. An individual with this personality will show the character that is reliable, has the motivation and hardworking (Salgado, 1997).

Extraversion (E) defined as the tendency to be friendly, cheerful, social, and energetic; Extraversion is about interpersonal interaction and ability to maintain happiness (Costa & McCrae, 1992) which is comfortableness and social ability (Zuckerman, 1991), love to chat, enthusiastic and assertive. High extraversion score shows that an individual happiness is related to others like open-mindedness and joviality. Meanwhile, an introvert person loves to be alone. Agreeableness, the tendency to be sympathetic, kind, trusting, and cooperative; This trait measures one's trait agreeableness measure aptitude or how they adjust with others to create harmony and to be cooperative (Graziano & Eisenberg, 1997). People with this trait will always be cooperative, and evaluated as honest, has dignity, honour, benevolent, trustworthy, and has less social rejection (Bierman, 2003) and these people also love to help others (Sheese & Tobin, 2007) and they do not need extra motivation (Cringer & Freifeld, 1995). Neuroticism (N) as the tendency to be resilient to negative emotions such as anxiety (Lipnevich, Preckel, & Krumm, 2016). Neuroticism is a trait that involves stability and instability of emotions or also knows as emotional balance. (Costa & McCrae, 1992). High score in this trait shows emotional instability and that person can be considered as depressed and has high pressure (Robbins, 2001).

3.   Methodology

3.1.   Participants

Participants were 89 learners diagnosed with LD that currently enrolled in Special Education Integrated Program (PPKI). The mean age of participants was 15.07 (SD = 2.19), and 63 % (n= 56) of the sample was male. Participants were recruited via a recommendation by the coordinator of the PPKI's program based on two inclusion criteria of (i) age range from 10 to 19 and (ii) able to understand written or verbal language appropriately. Participation involved the completion of questionnaires measuring the Big-Five personality traits, academic, and social self-efficacies.

3.2.   Materials

Personality. The Big-Five personality traits were measured by using the International Personality Item Pool (IPIP) by Goldberg et al. (2006). The measure comprises 50 items of the five factors Openness to

New Experiences (O), Conscientiousness (C), Extraversion (E), Agreeableness (A), and Neuroticism (N), rated on a five-point Likert scale, ranging from 1 (Very Inaccurate) to 5 (Very Accurate). Each dimension is measured by ten item subscales. Reliability estimates in previous studies are in the range of α= 0.78–0.86 for each subscale of the IPIP measure (Goldberg et al., 2006).

Academic self-efficacy. Academic self-efficacy was measured by using the Academic Efficacy scale from the Manual for the Patterns of Adaptive Learning Scales, MPAL (Midgley et. al, 2000). The scale has five items, rated on a five-point Likert scale, ranging from 1 (Not at all true) to 5 (Very true) that ask learners about their academic abilities. An example item is, "I'm certain I can learn the skills taught in class this year.". Reliability estimates in the previous study with adolescents with disabilities were 0.81 (Brubacher et al., 2018).

Social self-efficacy. Social self-efficacy was measured by using Social Competence Rating Scale for Children (SCRSC) that originally consisted of three sections (School Competence, Social Competence, and Good Peer Relations) but only the last two sections that included in the current study in order to measure social self-efficacy (Bonavia, 2016). The scale has 10 items in total, rated on a five-point Likert scale, ranging from 1 (Never True) to 5 (Always True) that ask learners about their social capabilities and peer relations. An example item is, "I make friends easily". Reliability for Social Competence and Good Peer Relations constructs were .84 both (Bonavia, 2016).

3.3. Procedure

Both instruction and questionnaires were read aloud to learners in groups by researchers. In circumstances which learners did not appear to understand and asked questions, the statement was paraphrased and explained at their level of receptive language. Learners were reminded to answer all questions to their best honesty and ability. Upon completion, researchers collected all answered questionnaires.

However, the use of self-report with people with disabilities especially related to intellectual can raise questions in terms of reliability and validity (Hartley & Maclean, 2006). Anyhow, after the review on 51 studies regarding adolescents and adults with intellectual disabilities Hartley & Maclean (2006) confirmed that self-report Likert-type scales have sufficient reliability and reliability even though completed by people with intellectual disabilities.

3.4. Statistical analyses

The IPIP, MPAL, and SCRSC questionnaire was read aloud to the total of 96 LD learners in PPKI. However, the number of usable questionnaires after screening the data was 89. The aim of the current study is to investigate the relationship between Big-Five personality traits (OCEAN) and academic and

social self-efficacies among LD learners. For this purpose, the data were analyzed by using Pearson correlation in IBM SPSS Statistics 23.

4. RESULTS

According to Fauzi, Jamal & Saifoul (2014) perfect correlation values are 1.0, 0.80 to 0.99 are very strong correlation values. Meanwhile, weak correlation values are between 0.01 to 0.19. If the value is 0.0 are shows that there is no correlation. Table 1 provided the correlation values adapted from Fauzi et. al., (2014). Table 2 provided correlations values between personality traits and academic and social self-efficacies.

Table 1. *Correlation Values*

Value	*Correlation*
1	*Perfect*
0.8 – 0.99	*Very strong*
0.6 – 0.79	*Strong*
0.4 – 0.59	*Intermediate*
0.2 – 0.39	*Weak*
0.01 – 0.19	*Very weak*
0	*No correlation*

H1: There is a statistically significant relationship between openness (O) and academic self-efficacy of LD learners.

Pearson correlation test shows that openness is statistically significant ($r = .36$, $p < .01$) relate to academic self-efficacy of learning disabilities (LD) learners. Thus, H1 is accepted. The positive relationship shows that when the openness is increased, the academic self-efficacy also is increased. The strength of the relationship is weak ($r = .36$).

H2: There is a statistically significant relationship between openness (O) and social self-efficacy of LD learners.

Pearson correlation test shows that openness is statistically significant ($r = .51$, $p < .01$) relate to social self-efficacy of learning disabilities (LD) learners. Thus, H2 is accepted. The positive relationship shows that when openness is increased, social self-efficacy also is increased. The strength of the relationship is moderate ($r = .59$).

H3: There is a statistically significant relationship between conscientiousness (C) and academic self-efficacy of LD learners.

Pearson correlation test shows that conscientiousness is statistically significant ($r = .51$, $p < .01$) relate to academic self-efficacy of learning disabilities (LD) learners. Thus, H3 is accepted. The positive relationship shows that when conscientiousness is increased, academic self-efficacy also is increased. The strength of the relationship is moderate ($r = .51$).

H4: There is a statistically significant relationship between conscientiousness (C) and social self-efficacy of LD learners.

Pearson correlation test shows that conscientiousness is statistically significant ($r = .50$, $p < .01$) relate to social self-efficacy of learning disabilities (LD) learners. Thus, H4 is accepted. The positive relationship shows that when conscientiousness is increased, social self-efficacy also is increased. The strength of the relationship is moderate ($r = .50$).

H5: There is a statistically significant relationship between extraversion (E) and academic self-efficacy of LD learners.

Pearson correlation test shows that extraversion is statistically significant ($r = .38$, $p < .01$) relate to academic self-efficacy of learning disabilities (LD) learners. Thus, H5 is successfully accepted. The positive relationship shows that when extraversion is increased, academic self-efficacy also is increased. The strength of the relationship is weak ($r = .38$).

H6: There is a statistically significant relationship between extraversion (E) and social self-efficacy of LD learners.

Pearson correlation test shows that extraversion is statistically significant ($r = .49$, $p < .01$) relate to social self-efficacy of learning disabilities (LD) learners. Thus, H6 is successfully accepted. The positive relationship shows that when extraversion is increased, social self-efficacy also is increased. The strength of the relationship is moderate ($r = .49$).

H7: There is a statistically significant relationship between agreeableness (A) and academic self-efficacy of LD learners.

Pearson correlation test shows that agreeableness is statistically significant ($r = .54$, $p < .01$) relate to academic self-efficacy of learning disabilities (LD) learners. Thus, H7 is successfully accepted. The positive relationship shows that when agreeableness is increased, academic self-efficacy also is increased. The strength of the relationship is moderate ($r = .54$).

H8: There is a statistically significant relationship between agreeableness (A) and social self-efficacy of LD learners.

Pearson correlation test shows that agreeableness is statistically significant ($r = .61$, $p < .01$) relate to social self-efficacy of learning disabilities (LD) learners. Thus, H8 is successfully accepted. The positive relationship shows that when agreeableness is increased, social self-efficacy also is increased. The strength of the relationship is strong ($r = .61$).

H9: There is a statistically significant relationship between neuroticism (N) and academic self-efficacy of LD learners.

Pearson correlation test shows that neuroticism is not statistically significant ($r = .00$, $p > .05$) relate to academic self-efficacy of learning disabilities (LD) learners. Thus, H9 is rejected.

H10: There is a statistically significant relationship between neuroticism (N) and social self-efficacy of LD learners.

Pearson correlation test shows that neuroticism is not statistically significant ($r = -.01$, $p > .05$) relate to social self-efficacy of learning disabilities (LD) learners. Thus, H10 is rejected.

Table 2. *Correlations of Personality Traits and Academic and Social Self-Efficacies*

Personality traits	Academic self-efficacy	Social self-efficacy
Openness	0.36**	0.59**
Conscientiousness	0.51**	0.50**
Extraversion	0.38**	0.49**
Agreeableness	0.54**	0.61**
Neuroticism	0.10	-0.01

**$p < .01$

5. DISCUSSION

The present study aimed to investigate the relationship between Big-Five personality traits (OCEAN) and academic and social self-efficacies among LD learners guided by ten research hypotheses. Eight out of ten hypotheses were accepted (H1 till H8) while the remaining two were rejected (H9 and H10). Amongst all, agreeableness and social self-efficacy show the strongest positive relationship. It is in line with the argument by Harris and Vazire (2016) that agreeableness is a personality trait that is most applicable to interpersonal interactions. As concluded by Soto, John, Gosling, and Potter (2011) childhood and adolescence is a crucial stage in forming satisfying and supportive close relationships, thus agreeableness seems to facilitate the successfulness of the social goal. Even though there is lack of findings on LD learners regarding agreeableness and social self-efficacy, but one for sure is that even though they are considered special needs learners (SEN): Friendship or social life is also crucial for a good quality of life (Sigstad, 2016).

Agreeableness also moderately positive related to academic self-efficacy together with conscientiousness. In an academic setting, agreeableness eases the entry of learners into new activities and mastery learning that lead to enhancement of academic self-efficacy (Caprara, Vecchione, Alessandri, Gerbino, & Barbaranelli, 2011). In agreement with Brown, Lent, Telander, and Tramayne (2011) that conscientiousness facilitates task engagement and effort, fostering higher self-efficacy beliefs. However, the moderate relationships between both personalities traits with academic self-efficacy may due to the fact LD learners are generally low in academic performance as compared to their typically developing (TD) peers (Kuldas et al., 2016). As empirically proven that academic self-efficacy is positively correlated with academic performance (Zuffianò et al., 2013)

Contributed to the significant moderate positive relationship were also openness, conscientiousness, and extraversion and social self-efficacy. According to Harris and Vazire (2016), openness is not a crucial factor in the formation and maintenance of friendship. Thus, maybe the reason for the moderate relationship between openness and social self-efficacy of LD learners. Hill, Weston, and Jackson (2018) also reported that a person who reported more positive social support will tend to show high conscientiousness, extraversion, and openness.

However, extraversion only shows a weak but significant relationship with academic self-efficacy together with openness. The findings in line with Stajkovic et al. (2018) that also found that extraversion and openness also show a weak positive relationship with academic self-efficacy for college learners. Individuals with LD is a lack of the ability to perform general academic tasks such as reading, writing, listening, and mathematical calculations (Crane et al., 2017). That's may be the reason even the relationship of both personalities' traits was weak but still significant. It is because openness relocates perceptions of demands into challenges of the task to be addressed (Sánchez-Cardona et al., 2012) while extraversion enhance positive reactions from others, which can enhance academic self-efficacy (Judge & Ilies, 2002).

Anyhow, there are limitations to this research. First, even though the consistency of the relationship between OCEAN and academic and social self-efficacies were obtained with those identified in previous work, but it was not with LD related studies. Replication of the study with another group of LD learners is required in order to confirm the findings. As most of the previous study were mainly with TD peers, high schools, and university learners. Second, we do not investigate the differences in personality profiles regarding gender. Actually, given established gender differences in personality dimensions, it would have been useful to examine gender differences in personality profile membership among LD learners.

6. LIMITATIONS AND FUTURE RECOMMENDATION

The study is not without its limitations. This study is based on a cross-sectional design that prevented the results from claiming causality between the substantive constructs. Thus, longitudinal research that investigates causality is an important area of future research. Furthermore, the data were collected using self-reports surveys which could cause biased. Future studies should use other methodological instruments such as observations or interviews to gain deeper insight from the perspectives of both instructors and learners with disabilities. Lastly, the present study included only learning disabilities (LD) learners in Malaysia. Thus, there is a need for future research in other educational settings and different cultures and even different age group.

7. CONCLUSION

The present study aimed to investigate the relationship between Big-Five personality traits (OCEAN) and academic and social self-efficacies among LD learners. Personality traits that have a significant relationship with academic and social self-efficacies were openness, conscientiousness, extraversion, and agreeableness. Openness, conscientiousness, extraversion, and agreeableness are empirically established to have a positive relationship with academic performance while academic performance also shows a significant positive relationship (Stajkovic et al., 2018). Thus, in order to increase academic self-efficacy, intervention aim to enhance extraversion and openness should be implemented as both personalities' traits are low in LD learners. It is empirically confirmed that personality traits are relatively stable over time, but they can and often do gently change across the lifespan (Soto et al., 2011). Anyhow, there is lack of research on personality traits and social self-efficacy (Harris & Vazire, 2016). As a review by Harris and Vazire (2016), agreeableness has the most consistent effects relationship regarding friendship while inconsistent results show by extraversion, conscientiousness, and openness. The current findings also confirmed the review.

REFERENCES

Angelkoska, S., Stanovska, G., & Dimitrovski, D. (2016). The personal characteristics predictors of academic success. In N. Popov, C. Wolhuter, J. Kalin, G. Hilton, J. Ogunleye, & E. Niemczyk (Eds.), *Education provision to everyone: Comparing perspectives from around the world* (BCES Conference Books, Vol. 16, pp. 262-268).

Bandura, A. (1986). *Social foundations of thought and action: A social-cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.

Bierman, K. L. (2003). *Peer rejection: Developmental processes and intervention strategies*. New York: The Guilford Press.

Brown, D., & Cinamon, R. G. (2016). Contribution of personality to self-efficacy and outcome expectations in selecting a high school major among adolescents with learning disabilities. *Career Development and Transition for Exceptional Individuals, 39*(4), 237–248.

Brown, S. D., Lent, R. W., Telander, K., & Tramayne, S. (2011). Social cognitive career theory, conscientiousness, and work performance: A meta-analytic path analysis. *Journal of Vocational Behavior, 79*(1), 81–90.

Brubacher, M. R., McMahon, S. D., & Keys, C. B. (2018). Self-efficacies, anxiety, and aggression among African American and Latino adolescents with disabilities. *Exceptionality, 26*(1), 20–34.

Caprara, G. V., Vecchione, M., Alessandri, G., Gerbino, M., & Barbaranelli, C. (2011). The contribution of personality traits and self-efficacy beliefs to academic achievement: A longitudinal study. *British Journal of Educational Psychology, 81*(1), 78–96.

Costa, P. T., & McCrae, R. R. (1992). Four ways five factors are basic. *Personality and Individual Differences, 13*(6), 653–665.

Costa, P. T., & McCrae, R. R. (1992). *Revised NEO personality inventory (NEO PI-R) and NEO five factor inventory (NEO-FFI)*. Odessa, FL: Psychological Assessment Resources, Inc.

Crane, N., Zusho, A., Ding, Y., & Cancelli, A. (2017). Domain-specific metacognitive calibration in children with learning disabilities. *Contemporary Educational Psychology, 50*, 72–79.

Department of Social Welfare. (2014). Department of Social Welfare Statistics Report 2014, 252. Retrieved from http://www.jkm.gov.my/file/Buku JKM 2014.pdf.

Dunbar, R. L., Dingel, M. J., Dame, L. F., Winchip, J., & Petzold, A. M. (2016). Student social self-efficacy, leadership status, and academic performance in collaborative learning environments. *Studies in Higher Education, 43*(9), 1507-1523.

Goldberg, L. R. (1993). The structure of phenotypic personality traits. *American Psychologist, 48*, 26– 34.

Goldberg, L. R., Johnson, J. A., Eber, H. W., Hogan, R., Ashton, M. C., Cloninger, C. R., & Gough, H. G. (2006). The international personality item pool and the future of public-domain personality measures. *Journal of Research in Personality, 40*(1), 84–96.

Graziano, W.G., & Eisenberg, N. (1997). Agreeableness; A dimension of personality. In R. Hogan, S. Briggs, & J. Johnson (Eds), *Handbook of Personality Psychology*. San Diego, CA: Academic Press

Harris, K., & Vazire, S. (2016). On friendship development and the Big Five personality traits. *Social and Personality Psychology Compass, 10*(11), 647–667.

Hartley, S. L., & Maclean, W. E. (2006). A review of the reliability and validity of Likert-type scales for people with intellectual disability. *Journal of Intellectual Disability Research, 50*(11), 813–827.

Heaven, P. C. L., & Ciarrochi, J. (2012). When IQ is not everything: Intelligence, personality and academic performance at school. *Personality and Individual Differences, 53*(4), 518–522.

Hill, P. L., Weston, S. J., & Jackson, J. J. (2018). The co-development of perceived support and the Big Five in middle and older adulthood. *International Journal of Behavioral Development, 42*(1), 26–33.

Jensen, M. (2015). Personality Traits, Learning and Academic Achievements. *Journal of Education and Learning, 4*(4), 91–118.

Judge, T. A., & Ilies, R. (2002). Relationship of personality to performance motivation: A meta-analytic review. *Journal of Applied Psychology, 87*(4), 797–807.

Karmvir. (2015). Self-efficacy and emotional competence of learning disability learners: A correlational analysis. *Indian Journal of Positive Psychology, 6*(1), 133–135.

Kaufman, S. B., Quilty, L. C., Grazioplene, R. G., Hirsh, J. B., Gray, J. R., Peterson, J. B., & Deyoung, C. G. (2016). Openness to experience and intellect differentially predict creative achievement in the arts and sciences. *Journal of Personality, 84*(2), 248–258.

Kuldas, S., Sinnakaudan, S., Hashim, S., & Ghazali, M. (2016). Calling for the development of children's number sense in primary schools in Malaysia. *Education 3-13, 45*(5), 586–598.

Levpušček, M. P., Zupančič, M., & Sočan, G. (2013). Predicting achievement in mathematics in adolescent learners. *The Journal of Early Adolescence, 33*(4), 523–551.

Lipnevich, A. A., Preckel, F., & Krumm, S. (2016). Mathematics attitudes and their unique contribution to achievement: Going over and above cognitive ability and personality. *Learning and Individual Differences, 47*, 70–79.

McCrae, R. R., & John, O. P. (1992). An introduction to the Five-Factor Model and its applications. *Journal of Personality, 60*, 175-215.

Ministry of Education Malaysia. (2013). *Preliminary report Malaysia educational blueprint 2013-2025*. Putrajaya: Ministry of Education, Malaysia.

Pajares, F., & Urdan, T. (Eds.). (2006). *Adolescence and education: Vol. 5. Self-efficacy beliefs of adolescents*. Greenwich, CT: Information Age.

Perera, H. N., Mcilveen, P., & Oliver, M. E. (2015). The mediating roles of coping and adjustment in the relationship between personality and academic achievement. *British Journal of Educational Psychology, 85*(3), 440–457.

Raghubar, K. P., & Barnes, M. A. (2016). Early numeracy skills in preschool-aged children: a review of neurocognitive findings and implications for assessment and intervention. *The Clinical Neuropsychologist, 31*(2), 329–351.

Robbins, S. P. (2001). *Organizational behaviour: Concepts, controversies, and applications* (9th ed). Englewood Cliffs, NJ: Prentice-Hall.

Salgado, F. (1997). The five-factor model of personality and job performance in the European community. *Journal of Applied Psychology, 82* (1): 30–43

Sánchez-Cardona, I., Rodriguez-Montalbán, R., Acevedo-Soto, E., Lugo, K. N., Torres-Oquendo, F., & Toro-Alfonso, J. (2012). Self-efficacy and openness to experience as antecedent of study engagement: An exploratory analysis. *Procedia - Social and Behavioral Sciences, 46*, 2163–2167.

Schultz, D., & Schultz, S. E. (2009). *Theories of Personality*. Belmont, CA: Wadsworth/Thompson

Schunk, D. H., & Pajares, F. (2002). The development of academic self-efficacy. In A. Wigfield & J. Eccles (Eds.), *Development of achievement motivation* (pp. 15-31). San Diego: Academic Press.

Sigstad, H. M. H. (2016). Significance of friendship for quality of life in adolescents with mild intellectual disability: A parental perspective. *Journal of Intellectual & Developmental Disability, 41*(4), 289–298.

Soto, C. J., John, O. P., Gosling, S. D., & Potter, J. (2011). Age differences in personality praits from 10 to 65: Big five domains and facets in a large cross-sectional sample. *Journal of Personality and Social Psychology, 100*(2), 330–348.

Spinath, B., Eckert, C., & Steinmayr, R. (2014). Gender differences in school success: What are the roles of learners' intelligence, personality and motivation? *Educational Research, 56*(2), 230–243.

Stajkovic, A. D., Bandura, A., Locke, E. A., Lee, D., & Sergent, K. (2018). Test of three conceptual models of influence of the big five personality traits and self-efficacy on academic performance: A meta-analytic path-analysis. *Personality and Individual Differences, 120*, 238–245.

UNICEF. (2013). *The state of the world's children, Executive summary 2013: Children with disabilities*, 1–26. Retrieved from http://www.unicef.org/publications/files/SOWC2013_Exec_Summary_ENG_Lo_Res_24_Apr_2013.pdf.

UNICEF. (2017). *Childhood disability in Malaysia: A study of knowledge, attitudes, and practices*. Retrieved from https://www.unicef.org/malaysia.

Wilson, T. M., Zheng, C., Lemoine, K. A., Martin, C. P., & Tang, Y. (2016). Achievement goals during middle childhood: Individual differences in motivation and social adjustment. *Journal of Experimental Education, 84*(4), 723–743.

Zuckerman, M. (1991). *Psychobiology of personality*. New York: Cambridge University Press.

Zuffianò, A., Alessandri, G., Gerbino, M., Luengo Kanacri, B. P., Di Giunta, L., Milioni, M., & Caprara, G. V. (2013). Academic achievement: The unique contribution of self-efficacy beliefs in self-regulated learning beyond intelligence, personality traits, and self-esteem. *Learning and Individual Differences, 23*(1), 158–162.