RELATIONSHIP BETWEEN COGNITIVE ABILITY, PERSONALITY, PSYCHOLOGICAL WELL-BEING AND SELF-ESTEEM AMONG HEARING-IMPAIRED STUDENTS: THE MODERATING ROLE OF EMOTIONAL INTELLIGENCE

UMMI HABIBAH BINTI ABD RANI

DOCTOR OF PHILOSOPHY
UNIVERSITI UTARA MALAYSIA
2018

Awang Had Salleh
Graduate School
of Arts And Sciences

Universiti Utara Malaysia

PERAKUAN KERJA TESIS / DISERTASI
(Certification of thesis / dissertation)

Kami, yang bertandatangan, memperakukan bahawa
(We, the undersigned, certify that)

UMMI HABIBAH ABD RANI

calon untuk Ijazah **PhD**
(candidate for the degree of)

telah mengemukakan tesis / disertasi yang bertajuk:
(has presented his/her thesis / dissertation of the following title):

"RELATIONSHIP BETWEEN COGNITIVE ABILITY, PERSONALITY, PSYCHOLOGICAL WELL-BEING AND SELF-ESTEEM AMONG HEARING-IMPAIRED STUDENTS: THE MODERATING ROLE OF EMOTIONAL INTELLIGENCE"

seperti yang tercatat di muka surat tajuk dan kulit tesis / disertasi.
(as it appears on the title page and front cover of the thesis / dissertation).

Bahawa tesis/disertasi tersebut boleh diterima dari segi bentuk serta kandungan dan meliputi bidang ilmu dengan memuaskan, sebagaimana yang ditunjukkan oleh calon dalam ujian lisan yang diadakan pada : ***26 Oktober 2017.***
That the said thesis/dissertation is acceptable in form and content and displays a satisfactory knowledge of the field of study as demonstrated by the candidate through an oral examination held on: ***October 26, 2017.***

Pengerusi Viva: *(Chairman for VIVA)*	**Assoc. Prof. Dr. Norhafezah Yusof**	Tandatangan *(Signature)*
Pemeriksa Luar: *(External Examiner)*	**Prof. Dr. Nik Ahmad Hisham Ismail**	Tandatangan *(Signature)*
Pemeriksa Dalam: *(Internal Examiner)*	**Dr. Norzaliza Alis**	Tandatangan *(Signature)*
Nama Penyelia/Penyelia-penyelia: *(Name of Supervisor/Supervisors)*	**Prof. Dr. Najib Ahmad Marzuki**	Tandatangan *(Signature)*

Tarikh:
(Date) **October 26, 2017**

Permission to Use

In presenting this thesis in fulfilment of the requirements for a postgraduate degree from Universiti Utara Malaysia, I agree that the University Library may make it freely available for inspection. I further agree that permission for the copying of this thesis in any manner, in whole or in part, for scholarly purpose may be granted by my supervisor(s) or, in their absence, by the Dean of Awang Had Salleh Graduate School of Arts and Sciences. It is understood that any copying or publication or use of this thesis or parts thereof for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall be given to me and to Universiti Utara Malaysia for any scholarly use which may be made of any material from my thesis.

Requests for permission to copy or to make other use of materials in this thesis, in whole or in part, should be addressed to:

Dean of Awang Had Salleh Graduate School of Arts and Sciences
UUM College of Arts and Sciences
Universiti Utara Malaysia
06010 UUM Sintok

Abstrak

Pelajar cacat pendengaran berkecenderungan menghadapi halangan komunikasi berikutan keterbatasan aspek pengalaman sosial-emosi serta kemahiran sosial yang berpotensi mempengaruhi kecerdasan emosi, keupayaan kognitif, personaliti, kesejahteraan psikologi dan estim kendiri. Kajian ini bertujuan mengkaji: (i) tahap dimensi keupayaan kognitif, tret personaliti, dimensi kesejahteraan psikologikal, dimensi kecerdasan emosi dan estim kendiri pelajar cacat pendengaran, (ii) perbezaan keupayaan kognitif, tret personaliti, kesejahteraan psikologikal, kecerdasan emosi dan estim kendiri berdasarkan jantina dan status pendengaran ibu bapa, (iii) hubungan antara dimensi keupayaan kognitif, tret personaliti, dimensi kesejahteraan psikologikal, dimensi kecerdasan emosi dan estim kendiri, (iv) kecerdasan emosi sebagai pemboleh ubah penyederhana dan akhir sekali, (v) faktor yang meramal estim kendiri pelajar cacat pendengaran secara signifikan. Responden terdiri daripada 163 pelajar cacat pendengaran dari lima politeknik serta dipilih melalui teknik persampelan rawak mudah. Statistik deskriptif dan inferensi dianalisis menggunakan Pakej Statistikal untuk Sains Sosial (SPSS). Dapatan kajian menunjukkan terdapat hubungan yang signifikan antara pemboleh ubah kajian. Terdapat perbezaan keupayaan kognitif dan estim kendiri yang signifikan berdasarkan status pendengaran ibu bapa. Terdapat juga hubungan signifikan antara estim kendiri dan *extraversion, agreeableness* dan *conscientiousness*. Kajian juga menunjukkan hubungan signifikan antara estim kendiri dengan dimensi kecerdasan emosi (interpersonal dan *mood* umum) dan dimensi kesejahteraan psikologikal. Kecerdasan emosi menjadi penyederhana hubungan antara memori, tumpuan, *neuroticism, openness, conscientiousness,* penerimaan kendiri, autonomi, tujuan hidup, penguasaan persekitaran dan perkembangan kendiri dengan estim kendiri. Dapatan juga menunjukkan dimensi interpersonal dan *agreeableness* menyumbang secara signifikan kepada estim kendiri. Kesimpulannya, kajian ini menyumbang kepada peningkatan pengetahuan berkenaan estim kendiri pelajar cacat pendengaran dan perkaitannya dengan keupayaan kognitif, tret personaliti, kesejahteraan psikologi dan kecerdasan emosi, khususnya dalam bidang psikologi perkembangan dan pendidikan khas di Malaysia.

Kata kunci: Keupayaan kognitif, Personaliti, Kesejahteraan psikologikal, Kecerdasan emosi, Estim kendiri.

Abstract

Hearing-impaired students tend to face obstacle in communication due to limitations of social-emotional experiences as well as social skills aspect which potentially influenced emotional intelligence, cognitive ability, personality, psychological well-being and self-esteem. This study aimed to examine: (i) the level of cognitive ability dimensions, personality traits, psychological well-being dimensions, emotional intelligence dimensions and self-esteem of hearing-impaired students, (ii) the differences in cognitive ability, personality traits, psychological well-being, emotional intelligence and self-esteem of the hearing-impaired students according to gender and parents' hearing status, (iii) the relationship between cognitive ability dimensions, personality traits, psychological well-being dimensions, emotional intelligence dimensions and self-esteem, (iv) emotional intelligence as a moderating variable and lastly, (v) factors that significantly predict students' hearing-impaired self-esteem. Respondents were 163 hearing-impaired students from five polytechnics and were selected via simple random sampling. The descriptive and inferential statistics were analyzed using the Statistical Package for Social Sciences (SPSS). Findings of the study showed that there were significant relationships between variables in the study. There was a significant difference in cognitive ability and self-esteem according to parent's hearing status. There were also significant relationships between self-esteem and extraversion, agreeableness and conscientiousness. The study also revealed significant relationships between self-esteem and dimensions of emotional intelligence (interpersonal and general mood) and dimensions of psychological well-being. Emotional intelligence moderated the relationships between memory, attention, neuroticism, openness, conscientiousness, self-acceptance, autonomy, purpose in life, environmental mastery and personal growth with self-esteem. The findings also showed interpersonal and agreeableness dimensions significantly contributed towards self-esteem. In conclusion, this study contributed towards enhancing the knowledge about hearing-impaired students' self-esteem and its relation to their cognitive ability, personality traits, psychological well-being and emotional intelligence specifically in the field of developmental psychology and special education area in Malaysia.

Keywords: Cognitive ability, Personality, Psychological well-being, Emotional intelligence, Self-esteem

Acknowledgement

In the Name of Allah, the Most Gracious and the Most Merciful. Solawat and Salam to our Prophet Muhammad S.A.W., his family members, companions and followers. Alhamdulillah praise to Allah the Al-Mighty as it is only by His grace, blessing, guidance and the 99 names of Allah i can reach to the end of this memorable journey.

I wish to express my heartfelt gratitude and appreciation to many people whom I am indebted to for being instrumental to the successful completion of my PhD study. My very special thanks go to my supervisor, Prof. Dr. Najib Ahmad Marzuki for his sincere guidance.

I am indebted to my beloved parents, Salasiah binti Abu Hasan, my father Abd Rani bin Md Noor, for their unconditional love and support. I am also grateful to have such loving and supportive siblings, Md Rino, Khatijah Husna, Mohd Redzuan, Hanisah and Abd Latif. Thank you all for your support. It is definitely an honor and pleasure to share doctoral studies, work and life with close friends, Fathiah, Eja, Kak Tun, kak Aini, Kak Not, Fana, Nadia, Amir and others. I am grateful for your compassion, patience and forbearing.

I am also very indebted to generous and warm response from the Ministry of Higher Education (MoHE) and the five polytechnics (Polytechnic Tuanku Syed Sirajuddin, Arau; Polytechnic Ungku Omar, Ipoh; Polytechnic Sultan Salahuddin Abdul Aziz Shah, Shah Alam; Polytechnic Ibrahim Sultan, Johor Bahru and Polytechnic Kota Kinabalu, Sabah). This experience has truly made my eyes wide open. I would like to thank polytechnics staff and hearing-impaired students from various polytechnics.

Table of Contents

List of Tables

List of Figures

CHAPTER ONE

INTRODUCTION

1.1 Introduction

World Health Organization (WHO) has reported an approximate calculation on the degree of hearing loss for adults and children. In adults (15 years or older), hearing loss refers to the minimum ability to hear in the degree of hearing greater than 40 dB. Meanwhile, for children (0 to 14 years) hearing loss refers to the degree of hearing loss more than 30 dB. The determinations of statistic data are based on a review of hearing-impaired population-based studies carried out up to 2017. Based on this, there are 360 million persons in the world with the disabling hearing loss (5.3% of the world's population), 328 million (91%) of these are adults (183 million males, 145 million females) and 32 (9%) millions of these are children (WHO, 2017).

In 2015, The Social Welfare Department Malaysia (SWDM) stated that the community of registered hearing impaired (children and adult) in Malaysia included 29, 636, and the number had increased to 31, 937 in 2016. Based on this number, there are 1,533 hearing-impaired from age 19 to 21 years old, which considered as aged for students who will further study for higher education. UNESCO estimates that on average, 10% of the population in developing countries have special needs. In Malaysia, only 1% of the population has been identified as having special educational needs, versus the global estimated average of 10% (WHO, 2017).

In 1954, the Federation School for the Deaf was established in Penang to accommodate special education for hearing impaired students in Malaysia. According to Mukari, Vandort, Ahmad, Saim, and Mohamed (1999), the goals of the institution was to make a connection and enhance understanding of the complex interactions between hearing-impaired community and normal hearing community in Malaysia. In line with the Malaysia (2012), the education policies for students with special needs are to be examined and improved through inclusive education and Special Education Integration Programme (SEIP).

However, the implementations of the special education program will not be effective and fully functioning because of fear and worry of the parents with disabled children in letting their children attend special education institutions. This attitude will not help the disabled children but instead will increase their distress towards the outside world (Fatimah, 2012). Fellinger, Holzinger, Sattel and Laucht (2008) claim that hearing-impaired students are unhappy with their outdoor activities and exercise but happier with their education and family. This is explained by the low scores obtained in research relating to their emotion, behavior and relationships with peers. A key component of successful is the stability in the psychological aspects. Moreover, a systematic review done by Kamil and Lin (2015), found that hearing-related communication problems in person who is hearing-impaired underlies the negative effects of hearing impairment on communication partners and social functioning.

Therefore, there are needs to pinpoint the specific processes through which emotional intelligence impacts upon psychological well-being and hearing-impaired personality.

According to Jambor and Elliott (2005), school and family life are major factors in shaping hearing-impaired life experience and identity. Students spend a large part of their early years of life in schools where their development, potential and psychosocial well-being evolves. The student must be ready in both cognitive and emotional aspects to be successful in life. There has been a rebirth of interest in cognitive development and a growing recognition of the relevance of hearing-impaired to explore the issue (Howley & Howe, 2004).

Recently, investigators have examined the relationship between emotional intelligence and quality of life (Oyewumi, Akangbe, & Adigun, 2013; Heward, 2000). Moreover, several studies have documented the relationship between emotional intelligence and psychological well-being dimensions (Pourmohamadreza-tajrishi & Ashori, 2013; Shahida, Chua, Rosadah, Zalizan, & Hamizatun, 2012; Hanafi, Safani & Rosman, 2012; Luckner & Muir, 2002). Although extensive research has been carried out on emotional intelligence, less study dealt with the role of emotional intelligence as a moderator towards psychological well-being, cognitive ability, personality and self-esteem.

In addition, research has been done on self-esteem, personality and quality of life (Oyewumi, 2012), well-being (Murray & Greenberg, 2001; Wolters, Knoors, Cillessen & Verhoeven, 2012) and the dimensions of emotional intelligence and personality (Barchard & Hakstian, 2004; Beshears, 2004). However, researchers have not treated the self-esteem in much detail.

A cognitive ability such as memory and attention among hearing-impaired individuals has been of theoretical and practical interest to the researcher for more than a decade because of its crucial for understanding the connection of verbal and cognition as well as academic outcomes for hearing-impaired learners (Marschark & Wauters, 2011; Mayberry, 2002). The most interesting finding was that to validate the cognitive ability. Marschark, Thomastine and Trani (2016) suggested employing the advanced computerized cognitive battery testing on hearing-impaired. Tayrose (2011) study points out that future research should isolate the structure of cognitive ability in hearing-impaired people and its measurement. Thus, to extend the knowledge and fill the gap, this present study will utilize the software program called CANTAB (Cambridge Neuropsychological Test Automated Battery) version 6.0 which will measure the memory and attention ability using a specific test.

Along with this growth in the hearing-impaired study, researchers have shown an increased interest in emotional, psychological and social aspect of the hearing-impaired community. However, there has been a little investigation about the relationship between the psychological, and emotional aspect of hearing-impaired students. Therefore, this indicates a need to understand the relationship between psychological well-being, cognitive ability, personality, emotional intelligence and self-esteem among hearing-impaired students in Malaysia.

1.2 Background of The Study

Technical education and vocational training (TVET) were in the education system in Malaysia for over 40 years ago. Through intention of the Malaysian government to

this (TVET) program, the ministry of education has expanded resources for this institution. Accordingly, the capacity and capability of this system should be intensified to improve the quantity and quality of skilled workers and semi-skilled workers in Malaysia. By 2020, the government has targeted a 40% increase of the skilled workforce, which amounted to 1,434,000 more skilled workers and 482,000 more semi-skilled workers. Manpower demands of skilled and semi-skilled workers are expected to outgrow supply with the introduction of Economic Transformation Program (ETP).

Thus, technical education and vocational training (TVET) institutions need to address issues faced by the students and the institution itself. TVET in Malaysia commonly provides training to school leavers. The TVET education program emphasizes on practical works and skills to meet industry demand. According to Ahmad (2001), the TVET program students will not only develop the technical skill but also emphasize on an important element of communication skills, teamwork and the positive attitudes and those commitments are to be owned by the students.

Since the establishment of the first polytechnic in Malaysia, namely, Polytechnic Ungku Omar (PUO), Ipoh in 1969, the technical education system has grown in parallel with the progress of the development of the industry. Polytechnic formerly focuses on technical and vocational courses, and a number of other courses including engineering, accounting, technology, management and hospitality. These institutions offer four diploma programs based on Work-Based Learning, 54 diploma programs, 24 certificate programs, and five special education program certificates in the 31

polytechnics in the country. Over 366,434 graduates of the diploma and certificate in engineering, technology, trade and services were produced.

Overall, these programs have been well received by the community members, especially post-secondary education. In Malaysian Polytechnic, the total number of hearing-impaired students in the special education program certificate is 198. Male students consist of 94 (47.47%) compared to 104 (52.53%) female students. Polytechnic Tuanku Syed Sirajuddin, Arau; Polytechnic Ungku Omar, Ipoh; Polytechnic Sultan Salahuddin Abdul Aziz Shah, Shah Alam; Polytechnic Ibrahim Sultan, Johor Bahru and Polytechnic Kota Kinabalu, Sabah are the five polytechnics that offer special programs in specific fields (Department of Polytechnic, 2013).

Since the last decade, Ministry of Higher Education (MOHE) has offered a certificate program for hearing-impaired students through the five polytechnics institution. These programs provided technical and vocational training in five programs such as fashion and clothing design, hotel and catering management, graphic design, civil construction and mechanical maintenance. These programs are offered in four semesters, including one semester of industrial training in their field.

Based on the entry requirements for MOHE polytechnic special education program certificate for students with special needs (hearing-impaired), this program is offered to Malaysian citizens. The applicants must have completed form five (5) in a special education school or special education integrated program under the purview of Ministry of Education Malaysia (Department of Polytechnic, 2013). The policy shows

polytechnic uphold the principle of equality of rights and opportunities, accessibility and gender equality to anyone who wishes to pursue studies at the polytechnic.

These programs offered in polytechnics to hearing-impaired students are based on the capabilities and interests of these groups on the fields of technical, management and art. The programs offered involve the implementation of this human capital are intended to enable them to develop themselves and become useful individuals to the nation and to improve their standard of living. This coincides with the United Nations Global Program on Disability that suggests three key objectives of special needs including hearing-impaired need to be given opportunities and incentives to develop themselves and to participate effectively, their human rights and dignity must be protected as well as equal opportunities for employment, education, information, goods and equipment as well as services (Tan, 2000).

According to Shnekat (2015), hearing-impaired individuals are people who have lost hearing ability which can be compensated by hearing aids that allow them to learn just like normal hearing people. People who experience hearing impairment are persons who cannot rely on the feeling of hearing to learn the language or to benefit from different educational programs provided to normal hearing individuals, who can listen and they need teaching methods to help them to cope with the situation.

Fellinger, Holzinger, Dobner, Gerich, Lehner, Lenz and Goldberg (2005) have pointed that sense of identity, emotional and social growth of hearing impaired students should be highlighted in ensuring that the learning process can be fulfilled smoothly.

Moreover, Awad and Shreit (2002) claim that hearing-impaired need emotional and cognitive attention and mainly the concentration is on their memory, attention and interpersonal aspects. Marschark (2007) stated that the emotional characteristics of hearing-impaired were distinguished from normal hearing as, they show a high degree of egocentrism, misunderstand others' behaviours, ignore others' feelings, emotional instability and lack of desire and interest in life.

Through experience in conducting counselling session and provide psychology services to polytechnic hearing-impaired students, the most problems faced by hearing-impaired students are poor emotional management, lack of social skills and low self-esteem. These elements are important for self and social development in ensuring a better life. This is in line with Fazlinda (2013) who suggested that hearing-impaired students' self-esteem should be highlighted as the studies conducted showed students achieve a moderate level of self-esteem and self-efficacy. She also suggested that the element of emotion should be emphasized to support the TVET system in increasing the competence of hearing-impaired students.

Therefore, this study was conducted to investigate the relationships between self-esteem and cognitive ability, personality, psychological well-being and emotional intelligence of hearing-impaired students in polytechnics in order to strengthen the skills and knowledge and their potential as polytechnics students. Accomplishing this study also expands the knowledge of self-esteem, cognitive ability, psychological well-being and emotional intelligence as well as hearing disabilities and special education study in Malaysia.

1.3 Problem Statement

Hearing impaired individual faced verbal obstacles and it is the fundamental reason for the negative effects on specific aspects of development. There are cases where, due to hearing-impaired, individual lack of understanding on the part of the person engages in conversation, (Jacks, Marsh & Massey, 2000; Antia & Kreimeyer, 2003; Calderon & Greenberg, 2003) frequently faced communication problems and were unable to make themselves understood. According to Silvestre, Ramspott and Pareto (2007), this may influence the emotional growth, social and cognitive of hearing impaired individuals.

Moreover, Knoors and Marschark (2014) claim that hearing-impaired students frequently are at risk regarding social and emotional learning "due to more limited social-emotional experiences, social skills, and emotional maturity, any or all of which potentially can lead to negative impact on academic achievement". This situation likely involves in large part from communication challenges inside and outside of the home that can affect the manners and other behaviors which affect a social maturity of the hearing-impaired.

Heward (2000) noted that when the language developmental is a delay, there is a cascading effect on every aspect of emotional development, psychosocial development, self-esteem, self-efficacy, family concern, social competence and quality of life of the hearing-impaired person. Studies revealed that students with hearing impairment present more behavioural and social problems than their hearing peer (Davis & Hind, 1999; Oyewumi, 2012). The psychological and psychosocial

aspects will be a challenge for the hearing-impaired in terms of the relationship with other people in their daily life.

The hearing-impaired confront everyday challenges as they navigate in a hearing world where ignorance and misconceptions frequently lead to access issues that may affect their emotion, social, and well-being. It is known that part of emotional intelligence is emotional, personal and social abilities which involve the ability of an individual to maintain their relationship with others, express and manage their emotions, self-assessment of emotions perception of own self-control, and solved the problem in an effective way (Lukomski, 2007).

Lily (2004) has reported that hearing-impaired students in polytechnic feel inferior and isolated from normal hearing students. This situation led to the socialization process that cannot be executed properly. This is supported by Nurul Hariza (2012) where she found that an individual with hearing impairment is known to be feeling alienated from society. People with hearing impairment often distort by normal people because of their disability which is not obvious, compared to visual impairment and mental retardation. Hearing impairment is a major threat not only to communicate but also to the personal and social life of the individual. Even though various findings had highlighted the importance of students' self-esteem, limited research had been done on hearing-impaired specifically in Malaysia. The insignificant number of study on hearing-impaired self-esteem has given Fazlinda (2013) an idea to an in-depth study in an education setting. Hence, the self-esteem aspect and self-confidence of hearing - impaired students need to be improved to sustain their well-being in life.

Further, the hearing-impaired students have to complete their industrial training hours to accomplish the polytechnic graduation requirement. However, hearing-impaired encounter some problems while undergoing industrial training. The study reveals that the hearing-impaired students have problems to communicate, cooperate and work as a team with colleagues from normal hearing people. Hearing-impaired students have been reported denying and emotionally being ignored by their normal hearing colleagues because it is hard for them to express their own feelings and ideas to show their capability and competency in their work (Siti Suhaila & Yahya, 2012).

Moreover, the lower level of self-esteem and soft-skills are the most problem faced by hearing-impaired students. They lack the confidence to voice out their opinion, ideas, afraid to show their ability and sharing their knowledge in certain cases. The good quality of workers such as high self-esteem, confidence and independent were the elements required by employers to hire a people (Siti Suhaila & Yahya, 2012). In consequence, the lack of social skills and employability skills is one of the reasons hearing-impaired students were less accepted in a workforce.

Thus, hearing-impaired students need to be willing to accept any challenge and mastered a skill in a particular career, be a positive person, demonstrate responsibility and always seize the opportunity to move forward, and not easily offended and feel ashamed. They also need to be more confidence and open-minded to accept new challenges to achieve success.

Nowadays, researchers are interested in the study of psychological aspect at school and its influence on students' personality (Aitao Lu, Yanping Yu, Xiuxiu Hong, Yi Feng, 2014; Cates & Lampham, 1991; Lesar & Vitulič, 2014; Oyewumi et al., 2013). However, in an analysis of personality and psychological aspect, some authors found that certain personality traits linked to the psychological aspect and some are not strongly associated.

Some authors have mainly been interested in questioning the association between psychological and cognitive aspects (Zekveld, George, Houtgast, & Kramer, 2013; Tayrose, 2011; Klassen, 2010; Andersson, Lyxell, Rönnberg, & Spens, 2001). Studies on the association between psychological aspect and well-being has been done by Pourmohamadreza and Ashori, 2013; Hanafi, 2012; Fellinger, Holzinger, Sattel, and Laucht, 2008; and Fellinger, et al. 2005. However, research shows inconsistent results on the association between cognitive and psychological aspect.

Emotional intelligence plays an important role in the maintenance factors of success in someone life. In previous studies, emotional intelligence was represented either as predictor (Shahida et al., 2012; Ferrando, et al., 2010) or mediator (Feng & Jingjing, 2012; Pablo, Cabello, Castillo, & Extremera, 2012; Seal, & Andrews-Brown, 2010). Studies were done by Ciarrochi, Deane and Anderson (2002); Austin, Saklofske and Egan (2005); Mikolajczak et al. (2009); Salami (2011); Davis and Humphrey (2012); and Görgens-Ekermans and Brand (2012) highlighting the role of emotional intelligence as a moderator variable.

Previous studies had stated the possibility of emotional intelligence as moderator factor between psychological distress and satisfaction (Bhullar, Schutte, & Malouff, 2012), personality and psychological well-being (Salami, 2011), personality, well-being and health (Austin, Saklofske, & Egan, 2005), stress and cognitive ability (Mikolajczak, Roy, Verstrynge & Luminet, 2009) as well as stress and mental health (Ciarrochi, Deane & Anderson, 2002; Davis, & Humphrey, 2012).

Although extensive research has been carried out on the emotional intelligence as a variable, little is known about emotional intelligence as a moderator and it is not clear which factors predict hearing-impaired student's self-esteem. In this research, the emotional intelligence is a possible moderator between cognitive, personality and psychological well-being of hearing-impaired students. This refers to hearing-impaired students' emotional intelligence that predicts their personality and cognitive ability, in response to the influences on their self-esteem (Ferrando et al., 2010). The is also based on previous research done by Ataabadi, Yusefi and Moradi (2013) found that self-esteem, emotional intelligence and social skill had correlated each other.

A considerable amount of literature has been studied on hearing-impaired demographic factors such as gender, type of school and parents' status of hearing. These studies identify the hearing-impaired gender and status of parents' hearing factor as a demographic factor. Crowe (2003), as well as Lesar and Vitulič (2014), have found no significant difference in self-esteem according to gender. In contrast, Fazlinda (2013) study has identified the differences of students' self-esteem according to gender. In a study, which set out to determine personality traits, Lesar (2012) and

Oyewumi et al. (2013) found that hearing-impaired students' personality traits do not differ significantly according to gender.

Marschark and Spencer (2003) have pointed the importance to investigate the roles of parents especially in the research of hearing-impaired population. It based on the critical role of parents and their influence towards their hearing-impaired children in the emotional, social, and cognitive development. Therefore, previous research into hearing-impaired has focused on the status of parent's hearing. Previous researchers have reported that parent's status of hearing was significantly difference on hearing-impaired self-esteem (Bat-Chava, 1993; Crowe, 2003; Hintermair, 2008; Woolfe & Smith, 2006). However, the result is inconsistent with Simon's (2010) study who summarize that there was no difference between hearing-impaired of hearing-impaired parents and hearing-impaired of normal hearing parents on the impact of self-esteem for difficult situations.

Studies on hearing-impaired populations that measure the differences between only two groups which are normal hearing parents and hearing-impaired parents have been done by Crowe (2003); Woolfe and Smith (2006); Marschark and Spencer (2003); and Hauser, Lukomski, and Isquith (2009). For simplicity of analysis and interpretation, in this study, researcher have decided to include only two groups of hearing status which are normal hearing parents and hearing-impaired parents as suggested by Woolfe and smith (2006).

It is, likely that such connection exists between hearing-impaired demographic factors (gender and parent's status of hearing) and the variables (personality, psychological well-being, emotional, cognitive ability and self-esteem). However, research studies on cognitive ability, personality, psychological well-being, emotional intelligence and self-esteem of hearing-impairment yield inconsistent findings. Therefore, this present study contributes to this growing area of research by exploring the demographic factors (gender and parent's status of hearing) on hearing-impaired cognitive ability, personality, psychological well-being, emotional intelligence and self-esteem.

Along these lines, it is imperative to study the relationship between self-esteem, cognitive ability, personality, psychological well-being and emotional intelligence in polytechnic settings in order to fill up the knowledge gap between hearing-impaired emotional and psychological study in the polytechnic setting. Based on the previous discussion, this study also examines the hearing-impaired student's self-esteem, cognitive ability, personality, psychological well-being and emotional intelligence differences according to gender and parents' status of hearing. Hopefully, the literature and empirical findings of hearing-impaired in Polytechnic of Malaysia extend the knowledge and enlighten more future study on students with disabilities.

Based on the statement of the problem, several research questions are listed in the next section.

1.4 Research Questions

In order to investigate the problem of the study, the following research questions are developed:

(i) What is the levels of cognitive ability dimensions, personality traits, psychological well-being dimensions, emotional intelligence dimensions and self-esteem of the hearing-impaired student?

(ii) Are there differences in cognitive ability, personality traits, psychological well-being, emotional intelligence and self-esteem of hearing-impaired students according to their gender and parents' hearing status?

(iii) Are there any relationship between cognitive ability dimensions, personality trait, psychological well-being dimensions, self-esteem and the moderating constructs, which is emotional intelligence dimensions of hearing-impaired students?

(iv) Are there any moderating effects of emotional intelligence on the relationship between self-esteem, cognitive ability dimensions, personality traits and psychological well-being dimensions of hearing-impaired students?

(v) What are the significant factors of cognitive ability, personality traits, psychological well-being and emotional intelligence that may predict self-esteem of hearing-impaired students?

1.5 Research Objectives

(i) To investigate the levels of cognitive ability dimensions, personality traits, psychological well-being dimensions, emotional intelligence dimensions and self-esteem of the hearing-impaired student.

(ii) To determine differences in cognitive ability, personality traits, psychological well-being, emotional intelligence and self-esteem of hearing-impaired students according to their gender and parents' hearing status.

(iii) To examine the relationship between cognitive ability dimensions, personality traits, psychological well- being dimensions and self-esteem of hearing-impaired students and the moderating constructs, which is emotional intelligence dimensions.

(iv) To analyse the moderating effects of emotional intelligence on the relationship between cognitive ability dimensions, personality traits, psychological well-being dimensions and self-esteem of hearing-impaired students.

(v) To determine factors of cognitive ability, personality traits, psychological well-being and emotional intelligence that may significantly predict self-esteem of hearing-impaired students.

1.6 Significance of Research

The findings of this research return the benefit to society considering that the importance of hearing-impaired students psychological and emotional aspect of life. The good in managing an emotional and psychological aspects of hearing-impaired contribute an effective life-changing of a hearing-impaired student. Thus, the administration of polytechnics applies the recommendation approach from the findings of this study to help the student to be a better person. Administrators are guided on what should be emphasized by lecturers and parents to improve hearing-impaired student's psychological and emotional aspects. The significance of the study linked to both theoretical and academic level.

This study investigates and bridges the gap in theoretical knowledge with regards to the relationship between independent variables (cognitive ability, personality traits and psychological well-being), dependent variable (self-esteem) and the role of emotional intelligence as a moderator among hearing-impaired students in the polytechnic setting.

Moreover, the findings of this study help the students to prepare themselves in terms of personality, boosts their self-esteem and attain an emotional intelligence to meet the needs of employers for qualified workers. This can help students achieve their career dreams and improve the quality of life, social economic status and satisfaction in their life.

Furthermore, this study is expected to provide information for the polytechnic administration to identify elements of emotional intelligence, personality and well-being that contribute to the statistic of hearing-impaired students' employability. The study may also help the administration of polytechnics in planning programs for the empowerment element of emotion, intellectual, self-esteem and in helping to improve employability welfare hearing-impaired students in polytechnic. This situation contributes to the mission and vision of the polytechnic to ensure that polytechnic institutions equip semi-skilled labor to the industry.

In addition, the results of the study give ideas to the administration of institution to develop a program in order to manage emotion, build up an intellectual and sustain well-being. This helps the industry own good personal qualities workers. This situation helped the industry to grow further, thus contributing to national income and more provide job opportunities for the hearing-impaired community in the future.

By relating findings of this study with other research on hearing-impaired students psychological and emotional aspect, feasibly some unique characteristics may be observed for those with hearing-impaired specifically in the polytechnic institution in Malaysia. This enables educational service to direct their special students in a way that best suits the objectives of both the institution and the students themselves.

1.6.1 Theoretical Significance

The study contributes towards the enlargement of theoretical and applied science through examining the association of emotional and psychological aspect of hearing-

impaired setting as part of the study of this research. The study provides information about the background of emotional intelligence in Malaysia specifically among hearing-impaired students. This study also indicates the trait of hearing-impaired personality to dealt with their emotional intelligence, cognitive ability and psychological well-being and maintain their self-esteem level.

In addition, this study uses a variety of assessment method, which is survey questionnaire test for assessing personality, psychological well-being, self-esteem and emotional intelligence and non-verbal test battery in assessing the cognitive ability of hearing-impaired students. The used of a variety approach in gathering the information contribute to the body of the knowledge in the study of hearing-impaired population.

Based on polytechnic mission which is "Breaking boundaries for the creation of transformative and creative learning environment for an innovation-led economy" (Department of Polytechnic, 2013). Hearing-impaired students' personality and psychological well-being are important for polytechnic to develop a fully functioning student in terms or emotional aspect and thus enhance hearing-impaired self-esteem in achieving a good quality of students.

Investigating the moderating role of emotional intelligence towards the personality, psychological well-being, self-esteem and cognitive ability with in-depth analysis enhance a knowledge of an emotional and psychological aspect of hearing-impaired students. The analysis and findings contribute to newly generated knowledge from the study. Thus, knowledge is expanded in this area.

Therefore, this study makes a major contribution to understanding and build greater awareness to polytechnic institutions, families and communities regarding the essential elements namely emotional intelligence, cognitive ability, self-esteem, psychological well -being and personality of hearing impaired students. Furthermore, this method can assist hearing- impaired students to cope with the challenges of life as to be a successful person in their life.

1.6.2 Academic and Practical Significance

The outcomes of this study provide an exciting opportunity to advance our knowledge of self-esteem of hearing-impaired students. This study also contributes to the growing area of research by exploring the hearing-impaired potential of emotional intelligence and personality in order to manage their personal emotions and characters in achieving a positive self-esteem.

There are several important areas where this study makes an original contribution to the polytechnic management and development in the future, particularly in terms of hearing-impaired psychological well-being, emotional intelligence, cognitive and self–esteem. Furthermore, this is in line with the goals of Malaysia special education to provide an acknowledgment to students with disabilities to learn and acquire personal attributes. This is consistent with the goals of the World Programme of the United Nations for students with special needs (United Nations Global Programme on Disability) in an article entitled " Policy and Implementation of the National Education System" by Hasnan and Syed Othman (2001), which suggests that special needs

students should be given the opportunity and encouragement to highlight their self-potential in their respective fields and effectively contribute to society.

The government has plan a long-term action for the year 2016-2022 for people with disabilities through the Ministry of women, family and community development (KPWKM). Core strategic plan for research and development is to promote research related to disabilities among academic institutions and research institutions. Indicators to be achieved is the number of academic studies and research related to disabilities, at least one (1) academic research related to disabilities in a year. In addition, the government is encouraging the research and development of the disabled to be widely disseminated for improvement actions (Malaysia, 2016). However, studies on disabilities such as hearing-impaired research are lacking in Malaysia. Thus, this study is relevant to meet the government's aspiration to fulfill the action plan in helping people with disabilities.

1.7 Conceptual and Operational Definition

1.7.1 Hearing-impaired

According to National Association of the Deaf (2015), hearing-impaired refers to people with limited hearing and deafness stated to the audiological condition of not hearing. Meanwhile, Paul and Jackson, (1993) defines hearing-impaired as a generic, audiological term, which refers to all levels covering from hard-of-hearing to total deafness of hearing losses. Hearing-impaired is also referred to someone who has damage to any part of ears and hearing loss (Siti Zaharah & Nor Azan, 2010). Meanwhile, a person with hearing impairment describes as an absolute or partial loss

of the capacity to hear out of one or two ears. The mild, moderate, severe or profound was characterize as a degree of hearing impairment (WHO, 2017)

In this study, hearing-impaired refers to polytechnic students with any degree of hearing loss. The study is limited to polytechnic students with the significant hearing-impaired; that is, hearing-impaired that delays spoken language. Thus, this study and its literature review focus on hearing-impaired students who require specialized learning environments at polytechnics but do not include hearing-impaired students at another institution. This functional definition includes most of the hearing-impaired students in polytechnic. Due to changes in societal trends and take into account cultural factors in Malaysia, the term deaf and hearing-impaired are referring to the same population in this study.

For brevity of the discussion, this paper utilizes the most inclusive term, hearing-impaired (HI), to refer to only individuals with hearing losses that are significant enough to hamper the acquisition of spoken language.

1.7.2 Cognitive Ability

Cognitive ability is an intellectual human ability to accomplish and manage with something complex through mental analysis (Horn & Noll, 1997). According to Brody and Taylor (2013), the general cognitive ability can be determined by a psychometric test of intelligence and it interpreted as a "latent trait" that is different with the accomplish intellectual ability. While a variety of definitions of the term cognitive

ability has been suggested, this study uses the definition suggested by Hunter (1986) who saw cognitive ability as the ability to learn.

In this study, attention ability and memory ability are the dimensions of cognitive ability that is being investigated. Throughout this thesis, the term attention is how well students can focus when faced with internal distractions such as mind wandering and boredom; and students' cognitive ability in memory ability, which is how well students utilized their memory ability when faced with external distractions. According to Zekveld, Deijen, Goverts, and Kramer (2007) CANTAB software can be utilized to measure the dimensions of cognitive ability (attention and memory) of hearing-impaired.

In this study, the cognitive test battery is a software program called CANTABeclipse (Cambridge Neuropsychological Test Automated Battery). These tests, which provide an effective method of cognitive ability assessment, is used to test the cognitive ability of hearing-impaired students at Malaysian Polytechnics. The CANTAB test may be broadly divided into seven main groups, which are screening tests; visual memory tests; working memory; attention tests; semantic/verbal memory tests; decision-making/ response control tests and social cognition tests. However, only attention and memory test are utilised in this study.

1.7.3 Personality

In viewing the differences of characteristics of hearing-impaired, the most appropriate operational definition of hearing-impaired students' personality is based on Allport's

(1961) conceptual definition of individual personality. Allport (1961) defined personality as individual's (in this study hearing-impaired) characteristics which capable to interfere with their health, mental wellness and well-being purely as it is a dynamic organization, of psychosocial systems that create their characteristic patterns of behavior, thoughts and feelings, personal wellness and stress.

In this study, the NEO-Five Factor Inventory (FFI) by Costa and McCrae (1992) is utilised to measures personality. The NEO-FFI includes five factors, which are neuroticism, extraversion, openness to experience, agreeableness and conscientiousness. Hearing-impaired neuroticism personality is their tendency to experience negative affect and emotional distress. Meanwhile, their extraversion personality is their sociability, activity, assertiveness and often-positive emotions. Their openness to experience personality is characterized by a willingness to entertain new ideas and unconventional values. Agreeableness is characterized by kindness, amiability, cooperation, and pro-sociality. Finally, hearing-impaired conscientiousness represents characteristics such as being dutiful, self-disciplined, organized and systematic.

1.7.4 Psychological Well-Being

History of the study of well-being shows that there are two approaches that can explain the definition of well-being, which is hedonic and demonic approach (Bradburn, 1969; Diener, 1984; Lyubomirsky & Lepper, 1999; Kahneman, Diener & Schwarz, 1999). The highlights of some of the constructs in the hedonic approach include happiness,

positive affect, negative affect and satisfaction with life. Waterman (1993), Ryff (1989a; 1989b) and Rogers (1961) highlights the demonic approach focuses on human development and the function of positive psychology. Although there are differences in approach, Michaelson, Abdallah, Steuer, Thompson and Marks (2009), and Diener (2009) convinced that well-being is a multi-dimensional construct. In 2006, Diaz et al. posited psychological well-being (PWB) as an approach that represents eudaemonic tradition, which is a positive indicator function with a focus on personal development and skills development.

For this study, the operational definition of hearing-impaired psychological well-being at the Polytechnic are based on Ryff (1989a, 1989b) conceptual definition of psychological well-being. Ryff (1989a, 1989b) defined psychological well-being as engaging in and rising to the challenges of life. Psychological well-being accounts for growth and change, which takes place during the course of a lifetime.

The Ryff's psychological well-being scale (PWB) is used in this study to measure psychological well-being. This scale involves the six-dimensions of psychological well-being in measuring hearing-impaired independent and self-determining (Autonomy), positive attitude and their past life (Self-acceptance), belief relationships with others (Positive relations with others), the belief that life aimed at them and meaningful (Purpose in life), effective use of opportunities (Environmental mastery) and to enhance the quality of life of hearing-impaired students (Personal growth).

1.7.5 Emotional Intelligence

In this study, the most suitable definition of emotional intelligence is based on Goleman's (1995) conceptual definition of emotional intelligence. Goleman (1995) defined emotional intelligence as the capability of individual (in this study hearing-impaired students) to monitor and regulate one's own feelings, understand the feelings of others, and use that emotion or feeling knowledge to guide thoughts and actions which capable of affecting their characteristic, well-being and how much value people place on themselves.

The operational definition of emotional intelligence in this study refers to the definition by Reuven Bar-On (1997) based on the EQ-I instrument. The scale and subscales of the EQ-I involved five dimensions which are intrapersonal skills, interpersonal skills, adaptability, stress management, and general mood. The intrapersonal skills, is the hearing-impaired self-regard, emotional self-awareness, assertiveness, independence, and self-actualization. The hearing-impaired interpersonal skills, includes their empathy, social responsibility, and relationship with others. Meanwhile, their adaptability includes reality testing, flexibility, and problem-solving. Their stress management refers to how they tolerate with stress and impulse control. Finally, hearing-impaired general mood refers to their optimism and happiness thoughts.

1.7.6 Self-esteem

Self-esteem means "respect for self" which comes from a Latin word. The 'self' part of self-esteem relates to the principles, judgement and character that influence ourselves. The 'esteem' part of self-esteem describes the "value and worth" that, one

gives individually. In other words, self-esteem is how we receive something for who and what we are in our life.

Self-esteem is defined as an internal belief system and one's own external life experience (Palladino, 1990). While Canfield and Miller (1996) defined self-esteem as the attitude one has towards oneself based on the sum of the self-respect: an assessment of personal worth, self-confidence: the assessment of personal competency and self-responsibility: the acceptance of one's actions and acting responsibly towards others.

In determining the self-esteem of hearing-impaired students, this study adopts the Rosenberg definition of self-esteem. Rosenberg (1979), defines self-esteem as a person's summary evaluation of their worthiness as a human being. Researchers believe global self- esteem is not a single dimension, but it was more of a personal nature in its entirety. According to Campbell and Lavallee (1993), motivation, emotion, behavior and cognitive human may influence by the self-esteem of an individual. In observing the hearing-impaired self-esteem, the Rosenberg Self-Esteem Scale (Rosenberg, 1965) is utilised in this study.

1.8 Research Hypotheses

Based on the aforementioned objectives, hypotheses of the research are divided into four sections specifically, Section A (hypotheses on differences), Section B (hypotheses on correlational aspects), Section C (hypotheses on moderator aspect) and

Section D (hypothesis on effects). There are seven main hypotheses that constitute 52 sub-hypotheses.

Section A: Hypotheses on differences:

Main Hypothesis 1:

There are significant differences of cognitive ability, personality, psychological well-being, emotional intelligence and self-esteem of hearing-impaired students according to gender.

H1: There are significant differences of cognitive ability according to gender.

H2: There are significant differences of personality trait according to gender.

H2a: There are significant differences of neuroticism personality according to gender.

H2b: There are significant differences of extraversion according to gender.

H2c: There are significant differences of openness personality according to gender.

H2d: There are significant differences of agreeableness personality according to gender.

H2e: There are significant differences of conscientiousness personality according to gender.

H3: There are significant differences of hearing impaired psychological well-being of hearing-impaired students according to gender.

H4: There are significant differences of emotional intelligence of hearing-impaired students according to gender.

H5: There are significant differences of self-esteem of hearing-impaired students according to gender

Main Hypothesis 2:

There are significant differences of cognitive ability, personality, psychological well-being, emotional intelligence and self-esteem of hearing-impaired students according to parents' hearing status.

H6: There are significant differences of cognitive ability of hearing-impaired students according to parents' hearing status.

H7: There are significant differences of the personality of hearing-impaired students according to parent's status of hearing.

H7a: There are significant differences of the neuroticism personality of hearing-impaired students according to parents' hearing status.

H7b: There are significant differences of the extraversion personality of hearing-impaired students according to parents' hearing status.

H7c: There are significant differences of the openness personality of hearing-impaired students according to parents' hearing status.

H7d: There are significant differences of the agreeableness personality of hearing-impaired students according to parents' hearing status.

H7e: There are significant differences of the conscientiousness personality of hearing-impaired students according to parents' hearing status.

H8: There are significant differences of psychological well-being of hearing-impaired students according to parent's status of hearing.

H9: There are significant differences of emotional intelligence of hearing-impaired students according to parent's status of hearing.

H10: There are significant differences of self-esteem of hearing-impaired students according to parent's status of hearing.

Section B: Hypotheses on Correlation:

Main Hypothesis 3:

Hearing-impaired cognitive ability dimensions, personality traits, psychological well-being and emotional intelligence is related significantly to self-esteem

H11: Hearing-impaired cognitive ability dimensions are related significantly to self-esteem.

H11a: Hearing-impaired memory is related significantly to self-esteem.

H11b: Hearing-impaired attention is related significantly to self-esteem.

H12: Hearing-impaired neuroticism is significantly related to self-esteem.

H13: Hearing-impaired extraversion is significantly related to self-esteem.

H14: Hearing-impaired openness is significantly related to self-esteem.

H15: Hearing-impaired agreeableness is significantly related to self-esteem.

H16: Hearing-impaired conscientiousness is significantly related to self-esteem.

H17: Hearing-impaired psychological well-being dimensions are significantly related to self-esteem.

H17a: Hearing-impaired autonomy is significantly related to self-esteem.

H17b: Hearing-impaired self-acceptance is significantly related to self-esteem.

H17c: Hearing-impaired positive relations with others is significantly related to self-esteem.

H17d: Hearing-impaired environmental mastery is significantly related to self-esteem.

H17e: Hearing-impaired purpose in life is significantly related to self-esteem.

H17f: Hearing-impaired personal growth is significantly related to self-esteem.

H18: Hearing-impaired emotional intelligence dimensions are significantly related to self-esteem.

H18a: Hearing-impaired intrapersonal is significantly related to self-esteem.

H18b: Hearing-impaired interpersonal is significantly related to self-esteem.

H18c: Hearing-impaired adaptability is significantly related to self-esteem.

H18d: Hearing-impaired stress management is significantly related to self-esteem.

H18e: Hearing-impaired general mood is significantly related to self-esteem.

Section C: Hypotheses on Moderator:

Main Hypothesis 4:

Emotional intelligence moderates the relationship between cognitive ability dimensions and self-esteem.

H19: Emotional intelligence moderates the relationship between memory and self-esteem.

H20: Emotional intelligence moderates the relationship between attention and self-esteem.

Main Hypothesis 5:

Emotional intelligence moderates the relationship between personality traits and self-esteem.

H21: Emotional intelligence moderates the relationship between neuroticism and self-esteem.

H22: Emotional intelligence moderates the relationship between extraversion and self-esteem.

H23: Emotional intelligence moderates the relationship between openness and self-esteem.

H24: Emotional intelligence moderates the relationship between agreeableness and self-esteem.

H25: Emotional intelligence moderates the relationship between conscientiousness and self-esteem.

Main Hypothesis 6:

Emotional intelligence moderates the relationship between psychological well-being dimensions and self-esteem.

H26: Emotional intelligence moderates the relationship between self-acceptance and self-esteem.

H27: Emotional intelligence moderates the relationship between positive relations with others and self-esteem.

H28: Emotional intelligence moderates the relationship between autonomy and self-esteem.

H29: Emotional intelligence moderates the relationship between purpose in life and self-esteem.

H30: Emotional intelligence moderates the relationship between environmental mastery and self-esteem.

H31: Emotional intelligence moderates the relationship between personal growth and self-esteem.

Section D: Hypothesis on Effect:

Main Hypothesis 7:

H32: Cognitive ability, personality, psychological well-being and emotional intelligence of hearing-impaired students significantly contributed towards their self-esteem.

1.9 Research Framework

The research framework of the study is developed to conclude the theoretical concept that related to the research study in cognitive ability, personality and psychological well-being and the moderator aspect which is emotional intelligence variable that affects the self –esteem of hearing-impaired students.

In this study, there are five variables involved. The cognitive ability, personality and psychological well-being are the independent variables as well as demographic factors. Emotional intelligence is the moderating variable while self-esteem acts as the dependent variable.

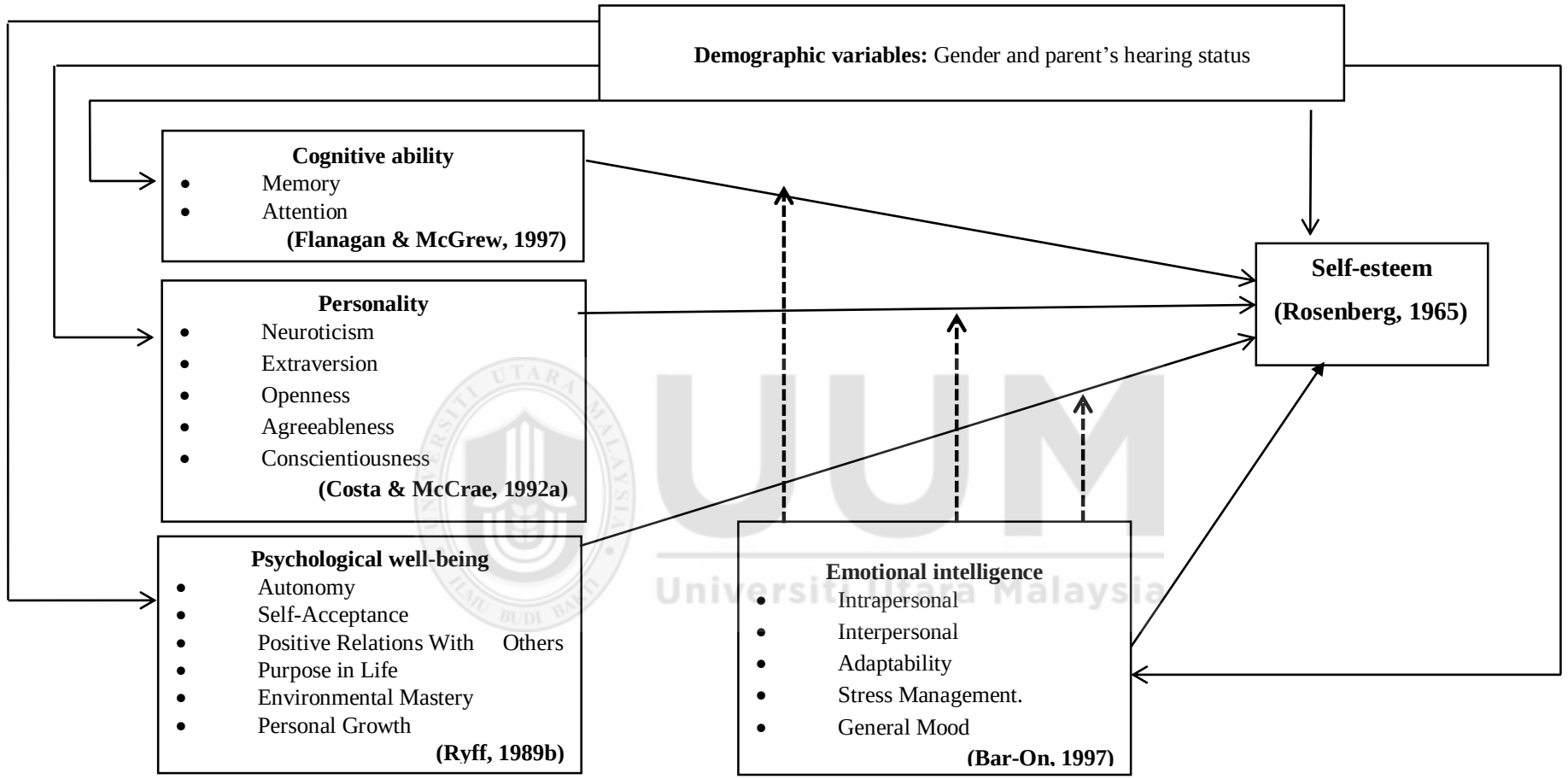


Figure 1.1. Research Framework

1.10 Summary

This chapter has addressed the perspective of this study such as the background of the study, problem statement, research questions, research objectives, significance of research, conceptual and operational definition of variables, research hypotheses and research framework.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter highlights the theoretical background and literature related to this study. It begins with the literature on cognitive theory, followed by personality theory, psychological well-being theory, emotional intelligence theory and self-esteem theory. Related studies in the field of hearing-impaired in Malaysia are also discussed followed by previous studies on cognitive ability, personality, psychological well-being, emotional intelligence and self-esteem.

2.2 Theoretical Background

2.2.1 Cognitive Ability

2.2.2.1 The Cattell-Horn-Carroll (CHC)

The Cattell-Horn-Carroll (CHC) theory is the most empirically supported and well researched of the multiple intelligence models. CHC theory has evolved from 70 years of factor-analytic research and has established both broad and narrow abilities within the theory (Flanagan & Ortiz, 2001).

The current conceptualization of CHC theory has evolved from the theory first proposed by Cattell to include fluid reasoning (Gf) and crystallized intelligence (Gc). Carroll has lengthened up the theory by Cattell through the review of more than 460 data sets that have been factor analyzed over the past 70 years. Carroll identified eight factors of intelligence based on this review and factor analysis, including fluid intelligence, crystallized intelligence, general memory and learning, broad visual

perception, broad auditory perception, broad retrieval ability, broad cognitive speediness, and processing speed (McGrew & Hessler, 1995).

More recently, Horn expanded Cattell's original two-factor theory to ultimately comprise of 10 factors (fluid reasoning (Gf), crystallized intelligence (Gc), quantitative knowledge (Gq), short-term memory (Gsm), reading and writing ability (Grw), visual processing (Gv), auditory processing (Ga), long-term retrieval (Glr), speed of information processing (Gs), and decision/reaction time or speed (Gt)). According to the test, battery approach is more comprehensive than traditional methods and yields more specific information as to an individual's cognitive functioning with respect to CHC theory (Flanagan & McGrew, 1997; Flanagan & Ortiz, 2001).

Based on theories as mentioned above for cognitive ability, the Cattell-Horn-Carroll (CHC) is the most appropriate theory to be utilised in this present study. McGhee and Lieberman (1994) stressed the need for practitioners to employ the standard intelligence tests to guarantee adequate assessment of cognitive areas. The previous study by Tayrose (2011) suggested the Cattell-Horn-Carroll (CHC) theory used to organize the hearing-impaired cognitive ability test battery measurement. Moreover, the components of CHC theory comprehend the cognitive ability dimensions (memory and attention) that engaged in the Cambridge Neuropsychological Test Automated Battery (CANTAB) test. According to Flanagan and McGrew (1997), Flanagan and Ortiz (2001) the CHC theory used to describe the way information is processed cognitively.

2.2.2 Personality

2.2.2.1 Big Five Model

Traditionally, the study of personality through self-report scale associated with the five-factor model (FFM) is a framework for the assessment of personality. Over the last decade, the use of big five dimensions of the FFM was widely used compared to other personality constructs (John & Srivastava, 1999). Generally, the big five personality traits span across cultures (McCrae & Costa, 1997) and can estimate the results widely, including academic achievement (Robins, John, & Caspi, 1998), personality disorders (Costa & Widiger, 1994), learning disabilities (Huntington & Bender, 1993) and deaf and hard-of-hearing (HOH) students (Lesar, 2012). In line with the phenomenon, the present study utilises the theory of the Big-five personality as a basis for assessing the hearing-impaired students personality.

According to Five Factor Model (FFM), there are five factors of personality traits, which are extraversion, agreeableness, conscientiousness, neuroticism and openness (Costa & McCrae, 1992). Extraversion includes characteristics such as sociability, activity, assertiveness and often positive emotionality. Agreeableness is characterized by kindness, amiability, cooperation, and pro-sociality. Conscientiousness represents characteristics such as being dutiful, self-disciplined, organized, systematic, precise, persistent, responsible and achievement oriented. Neuroticism encompasses anxiety, irritability, moodiness and the frequent experiencing of insecurity. Openness refers to curiosity, a tendency to explore new things, imagination and often subjectively perceived intelligence.

The aforementioned personality traits model was applied to the sample in different age, countries, personality data and analyses (Knyazev, Zupancic & Slobodskaya, 2008). Therefore, in this study, the Five Factor Model (FFM) is an appropriate model to utilise in order to deliberate the five dimensions of personality test instrument.

2.2.3 Psychological Well-Being

2.2.3.1 Ryff's Six-Factor Model of Psychological Well-Being

Psychologists have conducted studies widely on well-being (Campbell, 1981; Ryan and Deci 2000). Eudaimonic perspective and hedonic perspective are the two used items to explore the psychological well-being. According to Ryan and Deci (2000), Ryff (1989b), well-being and happiness are often function as a balance between positive and negative affect which are the hedonic view. Whereas, according to Waterman (1993), eudaimonic perspective is an associate real-life evaluation of an individual in life.

Ryff has built a new measurement of psychological well-being strengthen by the previous approach of eudaimonic well-being after experiencing some dispute previous perspectives on the theory of well-being. According to Ryff (1989a) and Ryff (1989b), principles which underlie any dimension theory has been thoroughly discussed elsewhere through appropriate methods to develop this theory.

Briefly, there are six components of psychological functioning of Ryff's scales psychological well-being (RPWB) : a positive attitude toward oneself and one's past life (self-acceptance), satisfying relationships with others (positive relations with others), a sense of self-determination, independence, and freedom from norms

(autonomy), having life goals and a belief that one's life is meaningful (purpose in life), the ability to manage life and one's surroundings (environmental mastery) and being open to new experiences as well as having continued personal growth (personal growth).

In this study, the Ryff's Six-factor Model of psychological well-being is considered appropriate to be utilised. It measures the hearing-impaired psychological well-being and the elements that are measure is in line with the six core dimensions of Ryff's Six-factor Model of psychological well-being. There are positive psychological health that include self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth (Ryff 1989a). Moreover, there are studies of hearing-impaired that utilised the Six-factor Model of psychological well-being (Mance & Edwards 2012; Palmer, et al., 2013; Maxwell, 2001).

Ryff et al. (1998) conceptualized protective factors that explain positive reactions to negative events as factors that ameliorate stressful situations so that adaptation is possible, including positive family relationships, social supports, high IQ, autonomy, affectionate, outgoing, possessing positive self-concepts in adolescence, problem-solving ability, good parenting, stable families, and high socioeconomic status (SES).

2.2.4 Emotional Intelligence

2.2.4.1 Emotional Intelligence Mixed Model

Bar-On (2002) describes emotional intelligence (EI) as the ability to perceive, integrate, understand, and manage emotions, which are involved with accepting

oneself and others, pertain to people, adjust and manage with effective ways to the different situation and environmental needs.

The emotional intelligence defined by Goleman (1998) refers to the ability of individual to describe the emotional self and others, self-motivation and the potential to conduct their emotions and the ability to build interpersonal relationships. Emotional intelligence is described by the five dimensions, which are self-awareness, self-control, self-motivation, empathy and social skills. The two-widespread emotional intelligence mixed model approaches are based on the work of Bar-On (1997) and Goleman (1998).

Goleman (1998) conceptualised emotional intelligence with the five broad characteristics of (a) knowing one's emotions, (b) managing emotions, (c) motivating oneself, (d) recognizing emotions in others, and (e) handling relationships. The Emotional Competence Inventory-2 (ECI-2), for example, is adopting to measure a Goleman model. Emotional intelligence is a compilation of both trait and formal characteristics, including intrapersonal, interpersonal, adaptability, stress-management, and general mood (Bar-On, 1997). Bar-On has suggested a characteristic of individual pursuits a lifelong experience throughout their lifecycle (Bar-On, 1997).

Mixed models of emotional intelligence are substantially different from the mental ability models. Although these models set out a mental ability conception of emotional intelligence, they also incorporate personality traits that might accompany such intelligence. These models seem to expand the meaning of emotional intelligence by explicitly mixing in non-ability traits. According to Bar-On (1997), intelligence is

distinct from cognitive ability. He defines intelligence as a collection of abilities, aptitude and skills showing a set of knowledges efficiently use to survive with life.

In Bar-On's theoretical work, elements such as personal independence, self-regard, and mood; makes it a mixed model. In Bar-On (1997) model, he predicts success with the product of that which one aims to complete. In addition, Bar-On Emotional Quotient Inventory (EQ-i) relates to the potential to succeed rather than success itself. Further, a more equalized image of person's general intelligence can be contributed if EQ is combined with IQ (Bar-On, 1997; Mayer, Salovey & Caruso, 2000).

Based on above literature, this study utilised the mixed model approach of emotional intelligence and the Bar-On EQ-i:S in measuring the hearing-impaired emotional intelligence. In rationalising this approach, an essential assumption shared by the models appears to be that individuals' differ in how skilful they are in perceiving, understanding, regulating, and utilizing this emotional information, and that this skill level represents a person's level of emotional intelligence, which contributes substantially to his or her intellectual and emotional psychological well-being (Salovey, Bedell, Detweiler & Mayer, 2008).

2.2.5 Self-esteem Theory

2.2.5.1 Rosenberg's Self-Esteem Theory

Rosenberg is a prominent author of self-esteem studies in social psychology. He describes self-esteem in terms of a specific type of character, one that is a reflection to be based on the concept of a feeling, a feeling about one's worth or worthiness or value as a person. He also links a self-esteem theory and his Rosenberg self-esteem Scale

(RSES) and accord a new perspective to psychologist and sociologist. The reflected appraisals and social comparisons are the two component of Rosenberg's self-esteem theory. Reflected appraisals emphasize that other people assessment of an individual effect on human communication. Regarding social comparisons, self-esteem is in part a consequence of individuals comparing themselves with others and making positive or negative self-evaluations (Hughes & Demo, 1989).

There are many theories that discuss self-esteem. Cooley (1902) argues that self-esteem is the "notion of the looking - glass self ", which the social environment affects the individual assessment of themselves. The symbolic interactionism concept that has been highlighted by Mead (2009) states that self–esteem is affected by internal ideas and people that are significant in the life of the individual. In affecting it, individuals behaviour is influenced by society and community around them. In fact, when an individual is abandoned, humiliate and rejected by others it leads to low self-esteem. According to the perspective of symbolic interactionism, it is considerable on how individuals identify themselves to be expected by significant of others in their life (Coopersmith, 1967 & Rosenberg, 1965, 1979).

Rosenberg (1965, 1986) and Smelser (1989) highlight the worthiness component of self-esteem in their sociological perspective research. Self-esteem is often conceptualized as being multidimensional, consisting of several specific domains that are related to various facets of life (e.g. perceived parental attention, social acceptance by peers and physical appearance), as well as a more general view of oneself, often called 'global self-esteem' (Harter, 2006; Blascovich & Tomaka, 1991). Rosenberg's ten-item measures global self-esteem and remains the most widely used questionnaire

of self-esteem by social psychologists today despite almost four decades having passed since its contrivance.

Therefore, it is appropriate to utilise the Rosenberg self-esteem approach and to utilise the Rosenberg self-esteem Scale (RSES) to measure the hearing-impaired self-esteem.

2.3 Previous Studies in Hearing-Impaired

The past decade has seen a growing trend towards a number of studies involving hearing-impaired conducted in Malaysia. There is a growing body of literature that recognises the importance of hearing-impaired education and psychological needs. The studies of the hearing-impaired population on emotional, social and psychological have risen.

Nurul Hariza (2012) has found out that a positive relation with others (family supports) has great influence on hearing-impaired academic achievement. The study has been conducted to explore the hearing-impaired students' career aspirations in polytechnic. Three important fundamentals in social cognitive career theory and the domain factors contribute to career inspiration had been investigated. The result revealed that female hearing-impaired students are more likely to achieve their career aspirations than the male hearing-impaired students.

Siti Suhaila and Yahya (2012) also did a study conducted in polytechnic that focuses on hearing impaired. The detailed examination of the hearing-impaired working environment and time flexibility showed that hearing-impaired student's perception about self-employment as a significant opportunity to earn for a living and achieve

economic independence. According to Ryff and Singer (1996) the capability of an individual mastery and competence in managing the environment makes effective use of surrounding opportunities and able to manage personal needs and values shows the high environmental mastery in psychological well-being aspect.

At the same time, Fazlinda (2013) carried out a study on psychological aspects. The results discover that self-esteem of the hearing-impaired students was at the moderate level and the student's self-efficacy was at the high level. The study investigated the mastery of employability skills, self- esteem and self-efficacy of the technical and vocational hearing-impaired students. This study has identified differences in students' self-esteem of students according to gender. However, there were no differences in students' self-efficacy according to gender. Moreover, the results show a weak, positive correlation between self-esteem and employability skills but strong, positive correlation between self-efficacy and employability skills of the hearing-impaired students.

Zamri and Yahya (2007) study was aimed to identify factors that affect hearing-impaired student learning in vocational subjects. The study involved 110 students in Vocational Secondary School. Results showed that the motivation of students and teachers is a factor in the high level of influence on student's learning. While the role of the family indicates a low level in influencing student learning.

Several studies investigating hearing-impaired psychological aspect has been carried out by Hanafi et al. (2012). The study aims to explore the hearing-impaired emotional intelligence dimensions (motivation, self-control, emotional management and social

skills) in a school setting. The result indicates no significant difference in emotional intelligence in terms of gender. An emotional intelligence shows a significant relationship between the level of academic performance and behavioural problems. Emotional intelligence illustrates one of the most important factors to measure hearing-impaired academic achievement.

Based on the previous studies, more research have been conducted to investigate hearing-impaired employability and career (Siti Suhaila & Yahya, 2012; Nurul Hariza, 2012) teaching and learning aspect (Hamidi, Ab Halim Temuri, Rosadah, & Fani, 2012; Zamri & Yahya, 2007; Siti Asmiza, 2004; Nur Tahrina, 2012) and physical fitness (Nagoor Meera, Borhan & Rohani, 2010). Studies encounter hearing-impaired social elements engaged hearing- impaired student is still less visible and requires in-depth attention (Fazlinda, 2013). To date, previous studies on the hearing-impaired setting in Malaysia is still less to encounter on how several aspects of psychological and social dimensions influence hearing-impaired social life.

2.3.1 Previous Studies on Cognitive Ability

The research on hearing-impaired cognitive ability such as memory and attention has been investigated for more than a decade because of its importance for understanding the hearing-impaired verbal and cognition relation as well as academic outcomes for hearing-impaired learners (Marschark & Wauters, 2011; Mayberry, 2002).

Marschark, Thomastine and Trani (2016) did a study of hearing-impaired and hearing college students who varied in their sign language abilities. The study was to extend and clarify the above relations among hearing status, sign language, cochlear implant

use, and working memory using complex memory span tasks. Research has found that hearing-impaired individuals achieve lower score of memory than hearing individuals. Black and Glickman (2006) investigate the hearing-impaired on demographic factors, a measure of language assessment, cognitive ability, and psychosocial functioning. The result indicates the hearing-impaired cognitive ability shows a low level of functioning. Generally, cognitive assessment often benefits from the specialized instruction of special education programs or placements (Mather & Wendling, 2005). Braden (2005) stated that an intellectual assessment of hearing-impaired is challenging yet essential. The assessment of cognitive abilities or intelligence has been a staple of education for decades (Fagan, 2002; Flanagan & Harrison, 2005). Thus, this segment reviews the previous study on the cognitive ability of hearing-impaired population.

Tayrose (2011) tried to explore whether the cognitive abilities of hearing-impaired and normal hearing people are organized similarly throughout the lifespan, from preschool through adulthood. The study uses analytical techniques that are consistent with present-day intelligence theory and statistical practice to investigate the relationship. Thus, the Cattell-Horn-Carroll (CHC) theory has been utilised to determine whether cognitive abilities were similar for hearing impaired and normal hearing people and to investigate the same domain in hearing impaired and normal hearing people measured using cognitive tests battery. In her review of cognitive ability, Tayrose identified the practicability of CHC theory in describing cognitive ability components.

In another study, Mitchell and Quittner (1996) conducted the research to examine the hearing-impaired extent of attention and behavior problems using multiple measures and observers. Hearing-impaired children had shown significant attention problems on

two of the three attention tasks. A study conducted by Smith, Quittner, Osberger and Miyamoto (1998) to assess the development of visual attention in hearing impaired children revealed hearing-impaired children use of environmental resonances to organize visual attention.

Further, the Cambridge Neuropsychological Test Automated Battery (CANTAB) which is non-verbal cognitive test were utilised in Zekveld et al. (2007) study to compare the relationship between hearing loss, memory and attention of the hearing-impaired population. In order to measure respondents' memory and attention, respondents performed cognitive tests of working memory and attention test. The result indicates that performance of memory and attention are not associated with hearing impairment.

Surowiecki, Sarant, Maruff, Blamey, Busby and Clark (2002) also performed The Cambridge Neuropsychological Test Automated Battery (CANTAB) to determine whether children with hearing impairment who use a cochlear implant and children who use hearing aids performed differently according to gender. Eight neuropsychological measures of visual memory, attention, and executive functioning were utilised to measure memory and attention domain. The findings indicate cognitive ability (visual memory, attention, and executive functioning) between children who use a cochlear implant and children who use hearing aids does not differ significantly.

Meanwhile, Zekveld et al. (2013) investigated the relationship between auditory and cognitive abilities and self-reported hearing disability using cognitive battery test on

analysing working memory. Participants with lower spatial working memory (SWM) reported fewer sound localization and speech perception in noise problems. Subjects with lower SWM reported fewer sound discrimination difficulties. The data indicate that large working memory was associated with more reported hearing difficulties. The study shows that besides auditory variables and age, cognitive abilities are related to self-reported hearing disability.

Moreover, Dye and Hauser (2014) studied the attention problems in hearing-impaired with no delayed exposure to the language. The study involved the hearing-impaired born to hearing-impaired parents and normal hearing born into normal hearing families. The data on measures of sustained attention shows that hearing-impaired and normal hearing did not differ in terms of attention.

This present study, utilize the non-verbal test considered as an effective method in assessing the cognitive ability. Consistent with earlier studies of Zekveld et al. (2013) and Surowiecki et al. (2002), the present study use the non-verbal cognitive Test battery, namely Cambridge Neuropsychological Test Automated Battery (CANTAB) to investigate the hearing-impaired cognitive ability dimensions. Based on previous studies, several demographic factors in terms of gender and parents' status of the hearing are included.

Currently, there has been much attention in the relationship between audition aspect and cognition. The new field of cognitive hearing science (Arlinger, Lunner, Lyxell, & Pichora, 2009) has highlighted the important role of domain-general cognitive processes, such as memory (Rönnberg, Rudner, Foo & Lunner 2008) and attention

(Wild, Yusuf, Wilson, Peelle, Davis & Johnsrude, 2012) in supporting spoken language comprehension and production. Therefore, this research would extend the knowledge on the relationship between emotional intelligence, cognitive ability and personality on the hearing-impaired student.

The CHC theory that utilised in this present study is based on the practicability and validity of this theory. This is related to nonverbal Cognitive Test batteries domain and measurement. This is supported by Tayrose (2011) and Braden (2005) where they suggested an appropriate measurement instrument accepted when similar reliability and validity values were found for that group as well as for the general population.

2.3.2 Previous Studies on Personality

The study on personality, peer attachment and loneliness among a group of hearing impaired adolescents had been done by Aitao Lu, Yanping Yu, Xiuxiu Hong, Yi Feng, and Haiping Tian (2014). The study was conducted to investigate the role of Big Five personality traits and psychoticism as moderating effects of peer attachment on loneliness. Findings show that extraversion moderate the relationship, but neither neuroticism had a moderating effect. These findings show that the peer attachment on a subjective mental state of hearing-impaired influence by extraversion of each individual.

The big five personality traits in research of hearing-impaired personality traits has been done by Lesar (2012). Finding shows that the levels of hearing impairment not associated with the type of personality and not differ significantly based on gender. She claims that an enlarged knowledge of personality traits has important implications

for education, allowing educators to adjust their classroom work to the individual characteristics of students in order to compensate for their weaknesses and nurture their strengths.

Lesar (2012) study also conclude the hearing-impaired students represent average values of the personality traits in comparison with the results of the group of hearing adolescents, and claim there are no significant differences from the majority hearing population in personality traits studied. Moreover, she has found hearing-impaired show a lower conscientiousness, agreeableness, extraversion and openness personality traits and these findings are contrary with studies done by Albertini, Kelly, and Matchett, (2011) and Calderon and Greenberg (2003).

Oyewumi et al. (2013) have observed study on personality traits influence that the domain of quality of life among hearing-impaired students. The study examines a combination of an independent (self-esteem, gender and onset of hearing loss) variable which is influenced by personality traits. Result reveal that adolescent with hearing impairment has no significant relative influence on perceived quality of life-based on male and female hearing impaired.

Based on previous studies, Aitao Lu et al. (2014) claim that some components of personality are associated with hearing-impaired. In contrast, Lesar (2012) conclude that there has no impact on student's self-report of personality traits. However, the existing research shows inconsistent findings of hearing-impaired personality. To date, a few studies have investigated the associations between personality and other psychological and emotional variables of hearing-impaired.

2.3.3 Previous Studies on Psychological Well-Being

The psychological well-being and physical well-being of hearing-impaired have been investigated by Keilmann, Limberger, and Mann (2007). The study focused on hearing-impaired from a segregated program (special school) and congregated program (regular school). Findings exhibited that psychological well-being domain differs significantly among hearing impaired category of school. Hearing-impaired in special schools accord themselves in a less favourable light than hearing-impaired in regular schools. Hearing-impaired in a special school achieved lower scores of self-acceptance and in relations with others elements. The study suggested more consideration should be given to the student's placement in appropriate school and classes in order to improve the hearing-impaired psychological well-being.

Currently, in assessing psychological well-being of hearing-impaired, Palmer et al. (2013) managed a study on 209 samples of hearing-impaired people. The data indicate that the positive impact on psychological well-being enhanced a self-knowledge from non-medical traits genetic information. Individuals who receiving a genetic explanation for why they are hearing-impaired will experience increased on psychological well-being. In 2005, Fellinger posited that poor quality of life on hearing-impaired physical and psychological domains. However, no significant difference was found between social relationship domain and quality of life. Overall, findings indicated a higher level of emotional distress among the hearing-impaired.

An interesting study by Fellinger et al. (2008) compared the quality of life and mental health in a representative sample of hearing-impaired. Results showed that there are differences in hearing-impaired concerning conduct problems, emotional problems,

and peer problems, and less obvious for inattention. Therefore, to reduce the problem of social isolation, a research recommends a specific training program and concentrate on the improvement of a positive self-concept and social skill.

In a study of psychological well-being of hearing-impaired (Mejstad, Heiling, & Svedin, 2009), male hearing-impaired had more psychological problems than female hearing-impaired did. In contrast, Wolters, Knoors, Cillessen and Verhoeven (2012) and Eldik, Treffers, Veerman, and Verhulst, (2004) reveal that no gender difference was found between hearing-impaired well-being according to the gender.

In sum, previous studies on psychological well-being address the general view of hearing-impaired psychological well-being. However, there has been little discussion on hearing-impaired psychological well-being dimensions. To date, it has been known that the best model and method to adopt psychological well-being is by utilising the Ryff's Six-factor Model and Ryff psychological well-being questionnaire.

This is supported by Jambor and Elliot (2005) that mentioned only a few studies which focus on psychosocial aspects like the quality of life, well-being or self-esteem in hearing-impaired children or young adults use questionnaires. Recently, research done by Zaidman-zait, Deirdre, Janet, Chia and Rozak (2017) have suggested that a study on hearing-impaired should include more precise data on hearing-impaired cognitive skills, along with the quality of life (QOL) such as well-being assessment, to provide broader, more accurate comparisons.

2.3.4 Previous studies on emotional intelligence

Shahida et al. (2012) explore the emotional intelligence of hearing-impaired preschool children. The findings revealed that preschool children with hearing impairments have difficulty in constructing social relationships and managing their own emotions. The study extends to measure hearing-impaired ability on recognizing their own emotions, how they manage emotions, motivation, recognizing the emotions of others, and establishing social relationships. The findings recapped the important role and involvement of parents and guardians as a component on hearing-impaired emotional development.

Meanwhile, Pourmohamadreza and Ashori (2013) conducted a study on the effectiveness of emotional intelligence training on the mental health of hearing-impaired students. The result from the semi-experimental study revealed the significant difference between experimental and control group according to emotional, psychological factors and general health as a whole after participation in intervention sessions. The findings reiterated that emotional intelligence training program constituted to promote the general health of male hearing-impaired students.

In the past, Lukomski (2007) revealed that female's hearing-impaired anxiety is significantly higher than males hearing-impaired, normal hearing females and normal hearing males. Hearing-impaired emotional antecedents and reactions had been explored by Simon (2010). So far, there is a gap in the knowledge of hearing-impaired adults' subjective emotional experience. The reactions variable and a few assessment dimensions were found to differ.

An interesting study on hearing-impaired investigating the relationship between emotional intelligence social skills and self-esteem with family communications was conducted by Ataabadi et al. (2013). The results showed that family communication construct was significantly associated with hearing-impaired emotional intelligence, self-esteem and social skills. Generally, the family communications construct is improved by increasing emotional intelligence domain.

Currently, this is supported by Ataabadi et al. (2014) findings, which indicated that there was a meaningful and positive relationship between emotional intelligence and academic achievement while there was no meaningful relationship between social skills and academic achievement. Findings suggested that educational institution and families should consider emotional intelligence, social skills, family communication, self-esteem and academic achievement of hearing-impaired students. Reed and Hindley (1998) postulate that delays in the development of language and communication skills can lead to a limited range of social interaction, social skills, and interpersonal problem-solving skills that may also affect emotional evaluations. Findings indicate emotional risk is higher in hearing-impaired people of hearing parents, not because of the hearing impairment itself but because of its consequences in a normal hearing community.

The stability in hearing-impaired emotions makes them more confident in communication and social interaction. As an outcome of the good social interaction, the potential hearing-impaired would be better served in leadership, achievement in groups, individual achievement, social relations, and management. In line with this

statement, it is significance to conduct the study focalize on hearing-impaired emotional intelligence.

Calderon and Greenberg (2003) estimated that hearing-impaired individuals experienced more socio-emotional risks than their hearing peers did. Result noted that competent socio-emotional functioning is the result of the ability to coordinate affect, cognition, communication and behaviour. They also suggest that their unique developmental paths might influence emotional assessments in hearing-impaired people.

According to the importance of findings above, this study fill the literature gap on a hearing-impaired study by investigating the role of emotional intelligence as a moderator of psychological well-being, cognitive ability, personality and self-esteem.

2.3.5 Previous Studies on Self- Esteem

Self-esteem refers to how you view yourself. Individuals with high self-esteem illustrate high regard of themselves, whereas individuals with low self-esteem do not have a good opinion about themselves. Therefore, self-esteem states on how much you value yourself. Each individual need self-esteem including the person with hearing impairment. In this section, previous studies concerning hearing-impaired self-esteem are reviewed and elaborated.

Recent research has investigated on the level of self-esteem of the hearing-impaired football players. Finding shows it was found out that self-esteem of the hearing-impaired football players was at moderate level. Elements that can reinforce and

maintain self-confidence of the hearing-impaired individual such as group identification, type of domestic/familial communication, hearing aids and severity of hearing loss. Study also reported that the group identity influences the level of self-esteem and self-confidence (Acak & Kaya, 2016).

Bat-Chava (1993) meta-analysis study found that hearing-impaired children of normal hearing parents obtain a low level of self-esteem rather than hearing-impaired of hearing-impaired parents. Furthermore, hearing-impaired people who used sign language and had strong relations with others (hearing-impaired community) scored higher in self-esteem level. The setting and situation with other hearing-impaired and community who used sign language may enhance the hearing-impaired self-esteem. Interestingly, studies have found that hearing-impaired who are not satisfy of being a member of a culture group indicate a low level of self-esteem but, hearing-impaired who are active in the community and are appreciative show a high level of self-esteem (Bat-Chava, 1994).

Bat Chava has expand his study on hearing-impaired self-esteem people in the year 2000. Through the use of Social Identity Theory (Tajfel, 1981), Bat Chava (2000) found that hearing-impaired people who expose in culture of hearing-impaired such as having a hearing-impaired parent have a higher self-esteem. A sample of 56 hearing-impaired were interviewed in depth using cluster analysis. In 2003, Crowe proposed a study to examine the demographic factors of gender and status of parents hearing towards hearing-impaired self-esteem. The Rosenberg Self-Esteem Scale was used to investigate the hearing-impaired self-esteem. Findings found the score of self-esteem are significantly different among hearing-impaired who have hearing-impaired parent

and normal hearing parent. Respondents who have hearing-impaired parents achieve a high scored on self-esteem compared to those with normal hearing parents.

Further, Jambor and Elliot (2005) study on the determinants of self-esteem of hearing-impaired, supports the above study. The study has revealed that hearing-impaired who acquire a higher level of self-esteem have a good relationship in both normal hearing society and the hearing-impaired society. The findings have also revealed that preschool children with hearing impairments have difficulty in building social relationships and handling their own emotions. The findings have reiterated the parents or guardians of hearing-impaired, which plays a vital and crucial role, and contribute toward hearing-impaired emotional development. The elements, which are affected by self-esteem, were related to communication at home and their coping styles.

At the same time, Desselle (1994) presented an article to determine the effect of family communication patterns have on the self-esteem of hearing-impaired children. The study engages the hearing-impaired children of normal hearing parents. Analysis of the data exhibited that there is a positive relationship between the families who practice a sign language rather than family who use the oral-only method with the hearing-impaired self-esteem level.

In addition, Mulcahy (1998) has identified that poor parental communication skills, poor relationship with parents, low intrapersonal skills, social segregation, negative physical appearance, family members, society denial and inadequacy of cultural identity, may potentially influence hearing-impaired individual's self-esteem.

Further, the 10-item scale developed by Rosenberg was also used to determine the self-esteem levels of the hearing-impaired sportsmen living in different European countries. The study by Acak (2012) suggests that more research should be a shepherd to meet the opportunities of hearing impaired people in every discipline in order to produce a highly qualified and ideal impaired person. The Rosenberg Self-Esteem Scale has been used to measure self-esteem factors in Oyewumi et al. (2013) study. The study revealed perceived quality of life of adolescents with hearing impairment is affected by the low level of self-esteem.

Lesar and Vitulič (2014) study focuses on the self-esteem of hearing-impaired students from Slovenia. For the entire group of hearing-impaired students, the study found that gender had no significant differences in all self-esteem dimensions, including social, emotional and physical self and confidence. Relative to the norms of normal hearing students, hearing impaired students achieved moderate scores in each self-esteem dimension.

The hearing-impaired demographic factor based on gender and parents' hearing status need further investigations. Furthermore, the self-esteem and hearing-impairment investigation is still producing inconsistent findings. There are researchers who conclude no significant difference in self-esteem according to gender (Crowe, 2003; Lesar & Vitulič, 2014). Other findings revealed that parent's status of hearing influences self-esteem (Crowe, 2003; Mulcahy 1998; Desselle, 1994 & Bat-Chava, 1993). Previous studies noted some variables contribute to a level of self-esteem (Desselle, 1994; Mulcahy, 1998; Jambor & Elliot, 2005). In measuring the level of

self-esteem, some studies utilised the Rosenberg self-esteem scale (Crowe, 2003 & Acak, 2012).

In view of all that have been mentioned so far, this study investigates the relationship between social and psychological domains that predict the self-esteem and to examine the differences in self-esteem according to gender and parent's status of hearing among hearing-impaired students.

2.3.6 Summary

Based on the literature, social relationships, emotional and psychological well-being play an important role and influence the hearing-impaired self-esteem and personality. Whereas some studies have shown that hearing impairment itself directly affects an individual cognitive ability, emotional and psychological well-being. Apparently, the hearing-impaired can influence various aspects in the life of some individuals, their families and society. According to Mitchell and Quittner (1996); Peterson and Slaughter (2006), and Rieffe (2011), emotional intelligence, levels of attention, and emotion regulation research are less studied in hearing-impaired population.

Research has demonstrated a relationship between cognitive ability and some aspects related to emotional intelligence, including social competence (Mayer & Geher, 1996). Some research has investigated the relationship between cognitive abilities and social factors (Ackerman & Heggestad, 1997), emotional intelligence (Roberts, Zeidner, & Matthews, 2001) and also emotional intelligence and personality traits (Barchard & Hakstian, 2004; Beshears, 2004), personality traits (including well-being, social potency, social closeness, extroversion, conscientiousness, openness, and

psychoticism, and alienation) have been linked to specific cognitive abilities (including crystallized intelligence, speed, fluid intelligence, learning and memory, visual perception ability, and math-numerical knowledge) (Ackerman & Heggestad, 1997).

The importance of conducting this research is due to various factors. Firstly, although self-esteem is widely researched in areas of education (Abbas, 2011; Tamannaifar, Arfai & Mohammadabadi 2010; & Uslu, 2013), sociology (Drury, Gail, & Alexander, 1980; Kaare, Mõttus, & Konstabel, 2009; Owens, 1994), psychology (Fulmer et al., 2010; Luhtanen & Crocker, 1992; Roberts & Bengtson, 2014; Robins, Hendin, & Trzesniewski, 2001) and management (Johar, Shah, & Bakar, 2013; Guardia & Ryff, 2003; Mesmer-Magnus1 & Chockalingam, 2006) but until recently, there is limited research on the self-esteem of hearing-impaired students specifically in polytechnic institutions in Malaysia.

Thus, the hearing-impaired self-esteem study may be helpful in the development of curriculum goals to increase self-esteem in hearing-impaired students. In addition, it expands the understanding of the characteristics of hearing-impaired self-esteem. In terms of practical value, the study provides information that may help in determining the association between self-esteem and other variables (cognitive ability, personality, emotional intelligence and psychological well-being), for hearing-impaired students. Based on the previous study, gender and parents' hearing status (normal hearing and hearing impaired) are linked to variables of the study.

According to Khor (2002) and Safani and Salleh (2000), a person with a disability is often related with problems of self-confidence, their capacity and capability that is often disputed. The tenets of psychology that refers to disabilities including hearing-impaired, such as self-esteem, well-being, intelligence and emotional development should also be concerned. Therefore, this study fulfils the literature gap on hearing-impaired psychological, emotional and social dimensions in the Malaysian context.

CHAPTER THREE

METHODOLOGY

3.1 Research Design

Research designs are planned procedures for research that span the decisions from extensive assumptions to detailed methods of data collection and analysis. It involves the intersection of philosophical assumptions, strategies of inquiry, and specific methods (Creswell, 2012). A research design that is chosen dependent on the availability of variables or constructs of the study.

A cross-sectional survey design paralleled with the quantitative method was adopted in this study. According to Babbie (2004), survey research provides a quantitative or a numeric description of trends, attitudes, or opinions of a population by studying a sample of that population. It includes cross-sectional and longitudinal studies using questionnaires or structured interviews for data collection, with the intent of generalizing from a sample to the population. Cross-sectional research also suggests an advantage for people with hearing-impaired, in terms of the perception of auditory stimuli in real-life situations, speech intelligibility and language skills (Geers & Moog, 1994; Lejeune & Demanez, 2006).

In this research, the cross-sectional design employ to utilize different groups of hearing-impaired students who differ in the variables of cognitive ability, personality, psychological well-being, emotional intelligence and self-esteem, but share other characteristics such as educational background and age. The main reason for choosing a quantitative method for the cross-sectional correlational survey design is due to the required degree of generalization of results.

According to Adler, Stier, and Clark (2008), cross-sectional studies is very appropriate for describing a sample on one or more variables and for seeing connections between the variables. It is useful for studying causal hypotheses when the time order between the variables is easy to determine, and when sophisticated statistical analysis can be used to control for possible antecedent variables. Therefore, cross-sectional correlational survey design is most appropriate for this research. The rationale for this research stems from the fact that the design allows researchers to examine many different variables.

3.2 Population and Sample

The population for this study consisted of students with hearing disabilities (hearing-impaired) over the age of 18 from five different polytechnics in the peninsular of Malaysia. The participating students are identified as students with hearing disabilities by their polytechnic and are currently receiving special education services at their polytechnic. The sample consisted of both male and female hearing-impaired students from all years of study. The crucial part of the sample design is to select a set of elements from a population in such a way that descriptions of those elements accurately portray characteristics of the population (parameters) from which they are selected. Probability sampling techniques are used when a researcher plans to make inferences about the population (Lau, Phang, & Zainuddin, 2009). A simple random sampling is appropriate for this quantitative study and to achieve these goals.

For this study, the researcher relies on probability sampling, in which every element in the population has a known chance of being selected into the sample. Probability sampling allows the chance of an element being selected to be quantified (ideally

equal). According to Dattalo (2008), probability sampling strategies, through statistical procedures, allow estimates of sampling error to be calculated. A simple random sampling may be the best-known sampling strategy. A commonly used simple random sampling procedure is to assign a number to each element in the sampling frame and use an unbiased process, such as a random number generator, to select elements from the sampling frame. In this study, the hearing-impaired student population in polytechnic is 198 students. A random size of 163 samples is to be taken based on Kreicie and Morgan (1970) table, from a population size of 198.

For example,

$$n_1 = \frac{n}{N} \times ni$$

Based on Krejcie and Morgan (1970) sample determination, the proposed sample for the population is in table 3.1.

Table 3.1

Population of hearing-impaired students at Polytechnic

Polytechnics	Population	Percentage (%)	Sample
Ibrahim Sultan, Johor	87	44	72
Tuanku Syed Sirajuddin, Perlis	37	19	31
Kota Kinabalu, Sabah	32	16	26
Ungku Omar, Perak	22	11	18
Sultan Abdul Aziz Shah, Selangor	20	10	16
Total	198	100	163

3.3 Instrument

3.3.1 Cambridge Neuropsychological Test Automated Batteries (CANTAB)

A set of Neuropsychological Test batteries of The Cambridge Neuropsychological Test Automated Battery (CANTAB), has been specifically designed for assessing the

cognitive from animals to humans. CANTAB expanded upon international level. Application of test batteries, including diagnosis, cognitive development and occupational work is a “law" that was highlighted by CANTAB. The CANTAB tests encompass various cognitive components. Subjects involved assessed naturally involving a variety of capabilities and the ability of an individual at various ages (Coull, Middleton, Robbins & Sahakian, 1995).

Some researchers have found that cognitive ability of hearing-impaired was not significantly difference from their hearing peers. However, there has been some recommendation that the materials such as image and patterns will benefit in test of nonverbal cognitive ability for hearing-impaired respondents (Braden, Kostrubala, & Reed, 1994).

According to Andersson and Lyxell (1999), phonological processing skill is related to hearing loss and this reflects a decent of phonological processes performed by memory. Indeed, the relevance of memory for language understanding is generally acknowledged (Rönnberg, 2003). Furthermore, because working memory has been found to improve speech understanding, it is likely that the more severe the hearing loss, the more extensively individuals rely on memory. Additionally, it is known that practice and experience can improve strategy use in tasks tapping memory (Ericsson & Kintsch, 1995).

CANTAB has been used and validated in many research components, and data from control subjects, which have been collated to create a normative database. Reference to these norms can assist in the interpretation of test data. CANTAB incorporates this

normative database. Based on previous researches, hearing impairment affects the cognitive process that involves language. The study had found that visual attention involves role play in audio video speech (Kushnerenko et al., 2013) and the word-to-world mapping (Yu & Smith, 2011). Therefore, in this study, the researcher highlights two aspects of hearing-impaired student's cognitive ability: memory (PAL) and attention (RTI).

Once the sample has run tests, the detailed of the data for each of the tests that have been run are stored. CANTAB Results Manager retrieves these results. Summary data may be output as either datasheets or reports. Summary datasheets for all test results selected in the table viewed in registered application for comma-separated value (CSV) files, or output to a single CSV file, with one row per subject, or one row per session, or one row per test result. The summary data may include normative database comparisons.

The results may also be saved as summary outcome measures known as a summary datasheet. A datasheet contains a grid-like arrangement of data values suitable for importation into a third-party product such as spreadsheet packages. Then the data detailed (mean, raw score, standard score and percentage) are saved to the spreadsheet package of SPSS for further analysis.

3.3.1.2 Procedure, Interpretation and Scoring

(i) Paired Associate Learning (PAL)

In this study, the paired associate learning (PAL) test was performed to measure the hearing-impaired memory ability. The administration time for the test will takes 8 minutes.

Boxes are displayed on the screen and are "opened" in a randomised order. One or more of them will contain a pattern. The patterns are then displayed in the middle of the screen, one at a time and the participant must select the box in which the pattern was originally located. If the participant makes an error, the boxes are opened in sequence again to remind the participant of the locations of the patterns. Increased difficulty levels can be used to test high-functioning, healthy individuals. Outcome measures include the errors made by the participant, the number of trials required to locate the pattern(s) correctly, memory scores and stages completed.

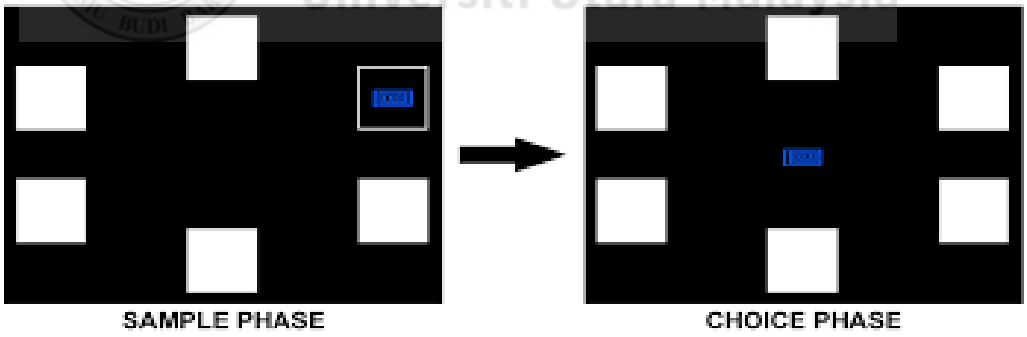


Figure 3.1. The PAL test screen.

Paired Associate Learning (PAL) Scoring

This test assesses the ability of memory function of hearing-impaired students on the use of efficient search strategy. The scores are computerized automatically by CANTAB software. The low mean score range (1.00 to 2.33), moderate mean score

range (2.34 to 3.66) and high mean score range (3.67 to 5.00) are illustrated in Table 3.2.

Table 3.2

Paired Associate Learning (PAL) Mean Score Range

Score	Range
Lower	1.00-2.33
Moderate	2.34-3.66
High	3.67-5.00

(ii) Reaction Time (RTI)

The elements attention of cognitive abilities is tested using Reaction Time (RTI) test. Reaction Time provides assessments of motor and mental response speeds, as well as measures of movement time, reaction time, response accuracy and impulsivity. The administration time for the RTI test will takes 3 minutes.

Circles are presented as in Figure 3.2 (one for the simple mode, and five for the five-choice mode). In each case, a yellow dot will appear in one of the circles, and the respondent must react as soon as possible, releasing the button at the bottom of the screen, and selecting the circle in which the dot appeared. Outcome measures are divided into reaction time and movement time for both the simple and five-choice variants. This task is designed to measure the respondent's speed of response to a visual. RTI description display a yellow spot appears on the screen, in either one location (Figure 3.2).

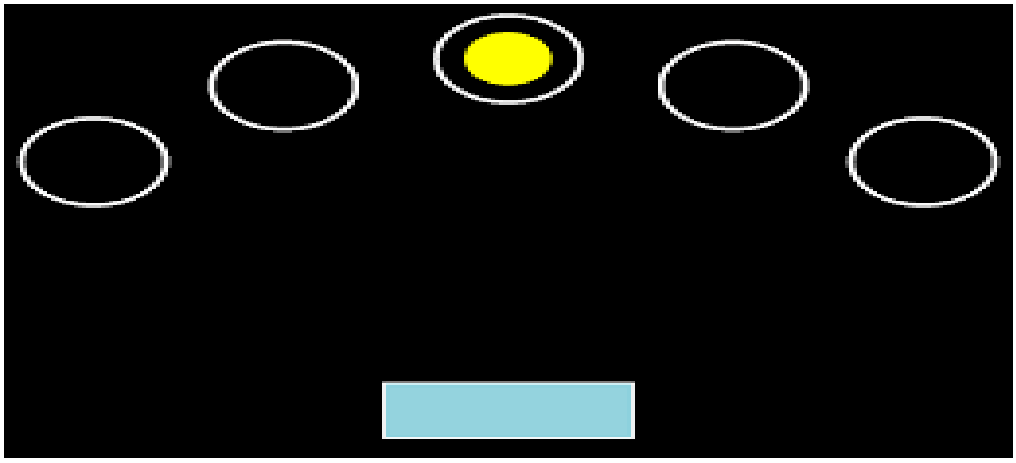


Figure 3.2. The RTI test screen.

Reaction Time (RTI) Scoring

The detailed of Reaction Time (RTI) mean score range is shown in table 3.3. The low mean score range (1.00 to 2.33), moderate mean score range (2.34 to 3.66) and high mean score range (3.67 to 5.00). Detailed description of mean score range is depicted in Table 3.3

Table 3.3

Reaction Time (RTI) Mean Score Range

Score	Range
Lower	1.00-2.33
Moderate	2.34-3.66
High	3.67-5.00

3.3.2 Personality Test

Personality traits is assessed through the NEO-FFI. It is a shortened version of the NEO-PI (Costa & McCrae, 1992a). The NEO Personality Inventory measure personality based on five personality traits namely neuroticism, extraversion, openness, agreeableness, and conscientiousness. NEO-FFI is created as a shortened version of NEO-PI with a total of 60 items (Costa & McCrae, 1992). There are 27

negative items to reversed (1, 3, 8, 9, 12, 14, 15, 16, 18, 23, 24, 27, 29, 30, 31, 33, 38, 39, 42, 44, 45, 46, 48, 55, 56, 57 and 59) in this study. The Cronbach's alphas for the five subscales ranged from 0.77 to 0.88 (John, Donahue, & Kentle, 1991).

Higher scores for all questionnaires indicate a stronger tendency on the relevant personality traits. Facets such as activity, assertiveness, and self-confidence represent the extraversion. Agreeableness refers to concern and sensitiveness toward others and their needs. Conscientiousness refers to self-regulation in both proactive and inhibitory mode. Neuroticism refers to the inability to cope adequately with one's own anxiety and emotionality and to control irritation and anger. Openness refers to the propensity to novelty, tolerance of different values, interest toward different habits and lifestyles (Jordan, 2011). Costa and McCrae (1985) adopted the term neuroticism for that related to anxiety. They considered that individuals with a high neuroticism (N) score tend to exhibit worry, nervousness, emotionality, insecurity, inadequacy, or hypochondria.

The self-report format instrument checked 60-items and take 20-25 minutes to respond. The NEO FFI includes self-descriptive statements that participants respond to using a 1 (strongly disagree) to 5 (strongly agree) likert- type scale. The NEO-FFI personality Inventory that has been translated into the Malay language by Najib and Awanis (2011) with the Cronbach's alpha are in the range of 0.63 to 0.76, is utilised for this study. The personality traits and items of NEO-FFI are illustrated in table 3.4.

Table 3.4

Personality Traits and Items

Personality traits	Items
Neuroticism	1,6,11,16,21,26,31,36,41,46,51,56
Extraversion	2,7,12,17,22,27,32,37,42,47,52,57
Openness	3,8,13,18,23,28,33,38,43,48,53,58
Agreeableness	4,9,14,19,24,29,34,39,44,49,54,59
Conscientiousness	5,10,15,20,25,30,35,40,45,50,55,60

All the five personality traits which are neuroticism, extraversion, openness, agreeableness and conscientiousness interpretation are summarized in table 3.5.

Table 3.5

Personality Traits Interpretation

Personality Traits	High Score	Average Scores	Low Scores
Neuroticism	Indicates that you are easily upset, even by what most people consider the normal demands of living. People consider you to be sensitive and emotional.	the level of emotional reactivity is typical of the general population. Generally able to get over of stressful and frustrating feelings.	Indicates that you are exceptionally calm, composed and unflappable. You do not react with intense emotions, even to situations that most people would describe as stressful.
Extraversion	Indicates you are sociable, outgoing, energetic, and lively. You prefer to be around people much of the time	Indicates you are neither a subdued loner nor a jovial chatterbox. You enjoy time with others but also time alone.	Indicates you are introverted, reserved, and quiet. You enjoy solitude and solitary activities. Your socializing tends to be restricted to a few close friends.
Openness	Indicates you enjoy novelty, variety, and change. You are curious, imaginative, and creative.	Indicates you enjoy tradition but are willing to try new things. Your thinking is neither simple nor complex.	Indicates you like to think in plain and simple terms. Others describe you as down-to-earth, practical, and conservative.
Agreeableness	Indicates a strong interest in others' needs and well-being. You are pleasant, sympathetic, and cooperative	Indicates some concern with others' needs, but, generally unwilling to sacrifice yourself for others.	Indicates less concern with others' needs than with your own. People see you as tough, critical, and uncompromising.
Conscientiousness	Indicates you set clear goals and pursue them with determination. People regard you as reliable and hard-working.	Indicates you are reasonably reliable, organized, and self-controlled	Indicates you like to live for the moment and do what feels good now. Your work tends to be careless and disorganized.

Source: Costa & McCrae, 1992

3.3.3 Psychological Well-Being

One of the most widely used scales to measure psychological well-being is the Ryff's psychological well-being scale (1989a). This scale breaks down the construct into six different dimensions (Ryff, 1989b) that are analysed separately, each with their own subscale. The dimensions are self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life and personal growth. This scale has high test-retest reliability and a high internal consistency. Moreover, its convergent and discriminant validity with other measures have also been studied. Ryff (1989b) conducted test-retest coefficients on psychological well-being and reports the alpha coefficients for the subscales of Self-Acceptance (0.93), Relations with others (0.91), autonomy (0.86), environmental mastery (0.90), purpose in life (0.90) and personal growth (0.87).

In this study, the Ryff psychological well-being (RPWB) instrument consists of 42 items that represent six dimensions are used to measure the hearing-impaired psychological well-being. Nurul Aini (2013) translates the instrument into Malay language. The internal consistencies (Cronbach's alpha) of the six well-being dimensions were 0.71, 0.79, 0.78, 0.68, 0.82, 0.71 for autonomy, self-acceptance, positive relations with others, environmental mastery, purpose in life and personal growth, respectively.

This version of the Ryff psychological well-being may hold across different cultures and countries. Ryff's model has been used in studies in several countries with languages different from English, for instance Malaysia (Nurul Aini, 2013; Siti Balqis 2011 & Nor Ezdianie, 2007), Chinese (Cheng & Chan, 2005), Spanish (Dierendonck,

Díaz, Rodríguez-Carvajal, Blanco, & Moreno-Jiménez, 2007). Previous literature shows the appliance of Ryff's scales of psychological well-being in different cultures and beliefs.

The response format for all items involved six-point likert scale from '1=strongly disagree' to '6=strongly agree'. Twenty PWB items are positively worded and 22 negatively worded (items no 3, 5, 8, 10, 11, 13,14,15,16,17,18, 23, 25, 26, 27, 30, 31, 33, 34, 36, 39, 41). Prior to analysis, negatively worded items were reverse scored so that high values indicated well-being (Abbott, Ploubidis, Huppert, Kuh, Wadsworth, & Croudace, 2006).

Responses are totalled for each of the six categories and each category, a high score indicates that the respondent has a mastery of that area in his or her life. The lowest score for overall psychological well–being test is 42, and the highest score is 252. Conversely, a low score shows that the respondent struggles to feel comfortable with that particular concept. The detailed description of Ryff's psychological well-being questionnaire is shown in table 3.6

Table 3.6

Psychological Well-Being Dimensions and Items

Dimensions	Items
Autonomy	1,7,13,19,25, 31, 37
Self-acceptance	6,12,18,24,30,36,42
Positive relations with others	4,10,16,22,28,34,40
Environmental mastery	2,8,14,20,26,32,38
Purpose in Life	5,11,17,23,29,35,41
Personal growth	3,9,15,21,27,33,39

3.3.4 Emotional Intelligence

In this study the Bar-On Emotional Quotient: Short (EQ-i:S), an instrument built by Reuven Bar-On in 1997 which is translated by Najib, Che Su, Zarina, Suhaini, Suhanim and Wan Bee (2006) are used to measure emotional intelligence. The Bar-On Emotional Quotient: Short (EQ-i:S) is a self-report instrument. The EQ-i:S subscales and total scale possesses good reliability (total test–retests between .58 and .70; sub- scale alphas between .76 and .84) (Bar-On, 2002).

According to an analysis by Bar-On and Parker (2000), the short versions of the questionnaire have moderate internal consistency (Cronbach's alpha values were between .65 and .87). Acceptable internal reliability for translated version obtained through studies conducted such as done by Najib et al. (2006) reported the alpha value ranging from 0.58 to 0.84.

This instrument contains 51 items, which includes five major scales and a control scale. It is a shorter version of the original version (EQ-i), which has 133 items with the five-point Likert scale from '1=strongly disagree' to '5=strongly agree'. The scale and subscales of the EQ-I involved are intrapersonal skills, includes self-regard, emotional self-awareness, assertiveness, independence, and self-actualization. The second category, interpersonal skills, is consisted of empathy, social responsibility, and interpersonal relationship. The third category is adaptability, includes reality testing, flexibility, and problem-solving. Stress management is divided into stress tolerance and impulse control.

Finally, the fifth category, general mood, involves optimism and happiness. The combination of dimension creates a theory that is multifactorial and related to the potential for performance rather than the performance itself and is process-oriented rather than outcome-oriented (Bar-On, 1997b). The Bar On EQ-i operationally define and quantitatively describes emotional intelligence. The Bar-On emotional intelligence dimensions and items are illustrated in table 3.7.

Table 3.7

Emotional Intelligence Dimensions and Items

Dimensions	Items
Intrapersonal	3,9,15,21,27,33,39,44,48,50
Interpersonal	2,8,14,20,25,32,38,43,47,51
Adaptability	5,11,17,23,29,35,41
Stress Management	4,10,16,22,28,34,40,45
General Mood	1,7,13,19,26,31,37,42,46,49

The lowest score for the overall emotional intelligence is 51 and the highest score is 255. Low scores reflect a low level of emotional intelligence (score between 51-122), a moderate score (between 123-189) describe a moderate level of emotional intelligence and high scores (between 166-255) describe a high level of emotional intelligence. Thirty EQ-i:S items are positively worded and 21 negatively worded items are reverse scored (items no 3, 4, 9, 10, 15, 16, 21, 22, 26, 27, 28, 33, 34, 37, 39, 40, 44, 45, 48, 49, 50).

3.3.5 Self –Esteem

The Rosenberg Self-Esteem Scale (Rosenberg, 1965), which comprised of 10 items with four points likert scale- from “strongly disagree” to “strongly agree” utilised in this study to measure self-esteem of the hearing impaired. The Rosenberg Self-Esteem

Scale (SES) is one of the most widely used measures of self-esteem for adolescents and adults (Blascovich & Tomaka,1991).

Rosenberg viewed self-esteem as a one-dimensional concept that reflects a person's experience of self-worth, and that transcends evaluation of a discrete characteristic of the self. Thus, the SES measure global self-esteem as a one-dimensional entity (Frey & Carlock, 1989). According to Blascovich and Tomaka (1991) and Rosenberg (1986), the RSES scale generally has high reliability with the range of 0.82 to .88, and Cronbach's alpha for various samples are in the range of 0.77 to 0.88. The reliability value shows a good internal consistency levels of RSES (Rosenberg, 1989; Santos & Maia, 2003).

In this study, the Rosenberg Self-Esteem scale used is a questionnaire that has been translated into Malay language by Mohd Jamil (2006) with the Cronbach's alpha in the range of 0.81 to 0.88. The instrument involved five positively worded items and five negatively worded items, comprised the positively worded Items 1, 2, 4, 6, and 7, and the remaining negatively worded items 3, 5, 8, 9, 10 to recode. With four possible choices per item, total test scores range from lower score 10 to higher score 40, with higher scores indicating higher self-esteem.

3.4 Data collection Method

The questionnaires were administered at five polytechnics in Peninsular Malaysia. Student from selected classes in special education programs participated. All selected participants were required to fill out a consent form. Subject consent forms were handed out along with a description of the study. The subject consent forms were then

collected, and the questionnaires were distributed. During the session, the interpreter, who was the sign language lecturer in polytechnic, help the students to understand the test instruction. The sign language lecturers were hired officially by Ministry of Education. The researcher remains in the classroom while the questionnaires being filled out to answer any questions or concerns, and to ensure that students do not discuss with each other. Data gathered, are entered into SPSS for data analysis.

3.4.1 CANTAB Software

During the cognitive ability test of the Cambridge Neuropsychological Test Automated Battery (CANTAB, 2015), the participant were assisted by sign language lecturers to facilitate the participant understanding of the test instructions. Each test starts with a couple of training trials that enabled the researcher to check whether the participant had understood the instructions. The CANTAB tests only contained visually presented stimuli.

All participants proceed with a screening test of the CANTAB, in which they have to touch a series of flashing crosses on the screen. The purpose of a screening test is to make sure that participants have knowledge of administered the Paired associate learning (PAL) test and Reaction time (RTI) test.

3.5 Pilot Study

A pilot study engaging cross-sectional survey was performed to test the reliability of the measure for all instruments. Through simple random sampling technique on 50 respondents, the survey questionnaires were distributed at Sekolah Menengah Pendidikan Khas, Persekutuan Pulau Pinang that have hearing-impaired students.

Johanson and Brooks (2010) suggest that 30 representative participants from the population of interest are a reasonable minimum recommendation for a pilot study. Other studies were done by Isaac and Michael (1995) and Hill (1998) suggested 10 to 30 participants for pilots in survey research. However, this pilot study utilises 50 respondents.

In this study, the reliability of measurement instruments was observed through internal consistency of Cronbach's alpha values. Researcher tests the construct reliabilities and results were at satisfactory level which Cronbach alpha more than 0.7. According to Field (2005), it is well recognized that an acceptable level for Cronbach's alpha is somewhere between 0.7 and 0.8. The result of the reliabilities analysis, as depicted in Table 3.8.

Table 3.8

Cronbach Alpha of Measurement

Measurement	No. of items	No. of item deleted	Pilot cronbach coefficient alpha value
Self-esteem	10	0	0.70
Psychological well-being (Overall)	42	0	0.88
Autonomy	7	0	0.85
Self-Acceptance	7	0	0.87
Positive Relations With Others	7	0	0.86
Environmental Mastery	7	0	0.84
Purpose in Life	7	0	0.87
Personal Growth	7	0	0.88
Emotional Intelligence (Overall)	51	0	0.78
Intrapersonal	10	0	0.76
Interpersonal	10	0	0.73
Adaptability	7	0	0.70
Stress management	8	0	0.78
General Mood	10	0	0.70
Neuroticism	12	0	0.91
Extraversion	12	0	0.90

Table 3.8 *continued*..

Measurement	No. of items	No. of item deleted	Pilot cronbach coefficient alpha value
Openness	12	0	0.89
Agreeableness	12	0	0.90
Conscientiousness	12	0	0.91

3.6 Data Analysis

For the data analysis strategy, this study applies the descriptive and inferential data analysis techniques to analyse the data. Demographic data of the respondents were analysed using descriptive statistics. Several issues need to be addressed, and data screening conducted prior to implementation of inferential analysis, including missing value and outliers. The test of violations of assumption such as normality, and linearity are addressed. The goodness of measure (reliability and validity test) was performed to validate the questionnaire.

Next, the descriptive analysis was performed to examine the level of each dimension variables. To determine the level of each dimension, the scores for each dimension are categorized into three levels, namely low, moderate, and high. This determination is based on the mean scores for each dimension. For this purpose, the lowest and highest mean score is determined from the measurement scale used. The value range was subsequently found by the mean difference of the highest mean score and the lowest mean score.

The value of this range is then divided by three (Pallant, 2007) to produce a range of values between the above three categories. Thus, the range for low level is between 1.00 to 2.33, the moderate level is between 2.34 to 3.66, and high level is between 3.67

to 5.00 (cognitive ability dimensions, personality traits, psychological well-being and emotional intelligence). Meanwhile, the psychological well-being score range for low level is between 1.00 to 2.68, the moderate level is between 2.68 to 4.34, and high level is between 4.34 to 6.00 and for the self-esteem variable, the range for low level is between 1.00 to 2.00, the moderate level is between 2.00 to 3.00, and high level is between 3.00 to 4.00.

The inferential analysis was used to fulfill the objectives of this study. The T-test, Pearson correlation and hierarchical regressions analysis were used to analyze the results. The T-test was performed to compare the differences in mean between variables (cognitive ability, personality traits, psychological well-being, emotional intelligence and self-esteem) and demographic factors (gender and parent's hearing status), the Pearson correlation was conducted to determine the association between the variables (cognitive ability dimensions, personality traits, psychological well-being dimensions and emotional intelligence dimensions) and the dependent variable (self-esteem). Meanwhile, a hierarchical regressions analysis was performed to test the moderating variable (emotional intelligence) on the relationship between the independent variables (cognitive ability dimensions, personality traits and psychological well-being dimensions) and dependent variable (self-esteem).

3.7 Summary

This chapter has described the research design adopted, which is the quantitative approach. Besides, the population and sample method were explained in detail, which involved a sample of 163 respondents. The chapter also discussed the instruments adopted in this study. Subsequently, the data collection procedure and pilot study have

been detailed out. In the data analysis section, the testing of statistical techniques which are descriptive analysis and inferential analysis are used for data analysis was performed. The following chapter presents the analysis of data and research findings

CHAPTER FOUR

RESEARCH FINDINGS

4.1 Introduction

This chapter discusses the results of the data analysis. The report of the chapter is as follows. First, the response rate and respondent's profile based on demographic factor are reported. Second, the results of data screening of missing value and outliers are presented. This is followed by the results of test for violation of assumption which are normality, linearity and multicollinearity test. In addition, the reliability test and content validity procedure were performed to fulfil internal consistency procedure and validity of instrument. Next, the results of descriptive statistic are provided. Finally, the result of inferential statistic to test the hypotheses using t-test, correlation and regression analysis are reported.

4.2 Response Rate

According to Babbie (2004), a researcher's success to influence respondents to respond to the questionnaire are measured by the response rate. In this study, to obtain higher return rates, the questionnaires were personally administered to the respondents. According to Sekaran (2003), personally administrated questionnaire encourages the respondents to response with honesty.

In this study, a total of 170 questionnaires were distributed to five polytechnics in Malaysia and all 170 questionnaires were returned. However, seven sets of questionnaires were excluded because of incomplete response. The final responses comprised of 163 questionnaires, which represent a return rate of 95.88% from the

total number of questionnaires distributed. The 163 questionnaires were used to analyze the data. Table 4.1 reports the response rate for this study.

Table 4.1

Response Rate of the Questionnaires

No. of distributed questionnaire	Returned questionnaire	Returned questionnaire rate	Incomplete	Usable questionnaire	Usable response rate
170	170	100%	7	163	95.88%

4.3 Demographic profile of respondents

This section presents the demographic profile of the respondents who participated in the study. In this study, three profile items of respondents were reported. They are gender, location of polytechnics and parents' hearing status. In terms of gender, 51.5% are female and 48.5% are male. Respondents are selected from five polytechnics in Malaysia which are in Perlis, Perak, Selangor, Johor and Sabah. Majority of respondents which comprised 44% are from Polytechnic Ibrahim Sultan, Johor, 19% from polytechnic Tuanku Syed Sirajuddin, Perlis, 16% from polytechnic Kota Kinabalu, Sabah 11% from polytechnic Ungku Omar, Perak and 10% from polytechnic Sultan Salahuddin Abdul Aziz Shah, Selangor. In terms of parents' hearing status, majority are reported as normal hearing parents which comprise 83.4% of respondents, while 16.5% reported have hearing-impaired parent. Table 4.2 summarizes the demographic profiles of the respondents.

Table 4.2

Demographic Profile

Demographic	Profile	Frequency	Percentage
Gender	Male	79	48.5
	Female	84	51.5
	Total	163	100
Polytechnic	Ibrahim Sultan, Johor	72	44
	Tuanku Syed Sirajuddin, Perlis	31	19
	Kota Kinabalu, Sabah	26	16
	Ungku Omar, Perak	18	11
	Sultan Abdul Aziz Shah, Selangor	16	10
	Total	163	100
Parents' hearing status	Normal	136	83.4
	Hearing-impaired	27	16.5
	Total	163	100

4.4 Data screening

4.4.1 Missing Value

The missing value identification is the first step in the data screening process. For identifying the missing response, researcher implement the frequency test for each variable. The results revealed that there were five cases having missing value issue, which represents only 0.8 percent, which is relatively small. In order to rectify the shortcoming, the missing data (items EQ21, EQ42, EQ44, P9, P13 and P50) were treated by replacing the values with the mean of the nearest values. According to Liu, Lei, and Zhang (2004), this approach was performed because of its unique ability to replace the missing values in terms of both the quantitative and qualitative attributes. In this study, the case of missing data is below one percent. Acuna and Rodriguez (2004), stated that if the rate is below one percent, the data is considered usable. In addition, if it is below five percent it is bearable and manageable, but if it reaches 15

percent it demands for drastic actions using very sophisticated techniques to overcome it.

4.4.2 Outliers

The next screening test data for this study is outliers. Coakes and Steed (2003), and Pallant (2011) proposed a boxplot to identify the outliers for each item. Boxplots describe the extreme score that led to the extraordinary respondents. Extreme value can be identified when there is a score shown as a circle outside the box. For example, there are two extreme scores in the data set. Referring to figure 4.1, the two small circles are outliers. This score is a score of respondent 66 and respondents 150.

According to Hair, Black, Babin and Anderson (2010), there are two options for dealing with data that which is to replace mean or eliminate the extraordinary respondents. In this study, the researchers choose the method of replacing the mean values for the above cases. After the two cases were replaced with mean values, figure 4.2 illustrated that the outliers no longer exist in the data. The boxplot will be symmetrical if the dataset is normally distributed. Detailed results of the other variables are shown in appendix B.

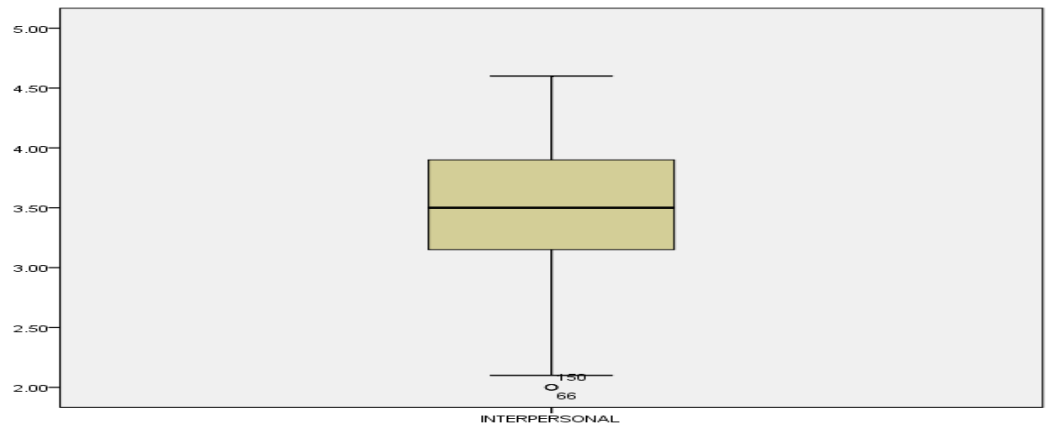


Figure 4.1. Boxplot before replaced with mean

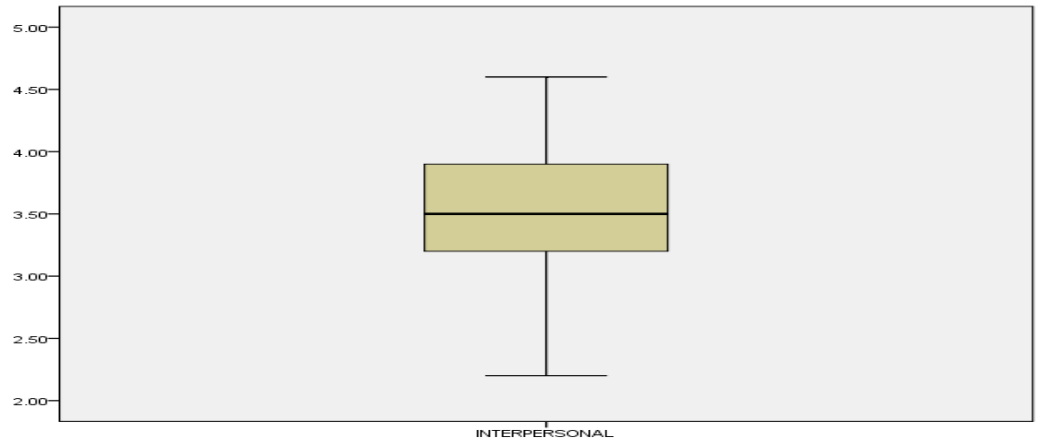


Figure 4.2. Boxplot after replaced with mean

4.5 Test for Violations of Assumption

4.5.1 Normality

Normality is one of the test for violations of assumption referring to the data distribution shape, and how it will correlate to the normal distribution which is symmetrical bell-shaped curve of data. Normality significantly influences the result of the data and it is critical in various statistical methods. A serious violation of assumptions will immensely influence researchers' choice of using suitable statistical tests: non-parametric or parametric test (Cramer & Howitt, 2004). This statement is supported by Park (2008) when he confirmed that one common assumption of any statistical methods, is that the data is normally distributed.

The normality test is a prerequisite before any inferential statistics are performed. Thus, data normality is the most critical factor in parametric analysis (Hair et al., 2010; Park, 2008; Tabachnik & Fidell, 2013; Cramer & Howitt, 2004). There are several ways to test the normality. In this study, researcher utilize the basic indicator of normality test is the skewness and kurtosis value. Skewness is the symmetry of the

distribution where normal shape graph is a perfectly symmetric distribution. Positively skewed distribution has scores clustered to the left, with the tail extending to the right whilst negatively skewed distribution is in contrast to the positively skewed.

On the other hand, kurtosis is the peakedness or flatness of a distribution when compared with a normal distribution. A positive value indicates a relatively peaked distribution, and a negative value indicates a relatively flat distribution. In this study, the data set was considered normally distributed and appropriate for parametric analysis as evident from table 4.3. Based on Tabachnick and Fidell (2013), skewness and kurtosis must not be more than +2 or – 2 standard deviations from the mean; any scores above +2 or -2 must be eliminated. Although it was slightly skewed (positive or negative) these scores were still in between the range of normal distribution (+2 and -2). Detailed results are depicted in table 4.3.

Table 4.3

Normality Test Statistics of the Variables

Dimensions	Skewness	Kurtosis
Self-esteem	0.23	-0.34
Psychological well-being (Overall)	0.27	-0.03
Autonomy	-0.36	1.04
Self-acceptance	-0.78	0.20
Positive relations with others	-0.91	0.44
Environmental mastery	-0.71	0.25
Purpose in life	-0.55	-0.46
Personal growth	-0.03	-0.27
Emotional intelligence (Overall)	0.37	-1.01
Intrapersonal	-0.20	0.26
Interpersonal	0.24	0.78
Adaptability	-0.97	0.27
Stress management	-0.30	0.06
General mood	-0.35	-0.30
Neuroticism	0.68	0.02
Extraversion	-0.26	-0.57

Table 4.3 *continued..*

Dimensions	Skewness	Kurtosis
Openness	-0.94	0.15
Agreeableness	-0.3	-1.1
Conscientiousness	0.87	0.31
Cognitive ability (Overall)	-0.35	0.11
Memory	-0.15	-0.96
Attention	-0.59	-0.47

4.5.2 Linearity

Multicollinearity assumption is a prerequisite before the implementation of the correlation and regression techniques. The occurrence of multicollinearity is possible when two or more independent variables are correlated to a high level and the determination of significant predictors becomes ambiguous. Also, multicollinearity maximizes the variance of regression coefficients and becomes a threat to the validity of the regression equation. A common cutoff threshold for multicollinerity is a tolerance value of .10, which corresponds to a VIF value of 10. (Hair et al., 2014). Based on table 4.4, evidences show that the multicollinearity results were not alarming.

Table 4.4

Multicollinearity Test Statistics of the Variables

Independent variables	Tolerance	VIF
Autonomy	0.69	1.46
Self-Acceptance	0.51	1.95
Positive Relations with Others	0.57	1.74
Environmental Mastery	0.55	1.82
Purpose in Life	0.54	1.86
Personal Growth	0.56	1.79
Intrapersonal	0.47	2.13
Interpersonal	0.47	2.12
Adaptability	0.56	1.77
Stress Management	0.38	2.61
General Mood	0.60	1.66
Neuroticism	0.87	1.15
Extraversion	0.65	1.55

Table 4.4 *continued..*

Independent variables	Tolerance	VIF
Openness	0.77	1.3
Agreeableness	0.58	1.72
Conscientiousness	0.83	1.21
Memory	0.91	1.1
Attention	0.9	1.11

4.6 Goodness of Measure

In this study, an important consideration following multivariate analyses which is, the goodness of measures was performed through reliability test and content validity prosedure. According to Sekaran (2003), the goodness of measures is confirmed through measures of reliability test and validity test.

4.6.1 Reliability

Hair et al. (2010) and Tabachnick and Fidell (2013) indicate the importance of reliability test of a measure where the test reflected the measurement's stability and consistency in measuring a particular concept and it was error-free with consistent measurement across time and across items in the instrument. The essentiality of measuring and reporting internal reliability (cronbach's alpha coefficient) for any scales in any research especially when utilizing Likert-type formatted scales is imperative (Gliem & Gliem, 2003). According to Sekaran (2003), the closer the reliability coefficient gets to 1.0, the reliability is better. In general, reliability coefficient less than 0.60 are considered as poor, those in the range of 0.70 are acceptable and those above 0.80 are considered as good.

In this study the Cronbach's alpha was used as internal consistency reliability which is the most common and widely accepted type of reliability. Thus, all construct variables in this study were tested on their internal consistency to indicate that individual items of the scale measured the same construct and therefore would be highly correlated (Nunnally, 1978).

The internal consistency results are highlighted in table 4.5. All constructs show high alpha Cronbach value.

Table 4.5

Result of Internal Consistency Reliability

Measurement	No. of items	No. of item deleted	Cronbach Coefficient Alpha Value
Self-esteem	10	0	.86
Psychological well-being (Overall)	42	0	.87
Autonomy	7	0	.91
Self-Acceptance	7	0	.89
Positive Relations with Others	7	0	.91
Environmental Mastery	7	0	.92
Purpose in Life	7	0	.86
Personal Growth	7	0	.93
Emotional Intelligence (Overall)	51	0	.85
Intrapersonal	10	0	.82
Interpersonal	10	0	.91
Adaptability	7	0	.86
Stress management	8	0	.89
General Mood	10	0	.93
Neuroticism	12	0	.94
Extraversion	12	0	.92
Openness	12	0	.92
Agreeableness	12	0	.93
Conscientiousness	12	0	.94

4.6.2 Content Validity

Content validity is concerned with sample-population representativeness, i.e. the variable covered by the test items should be representative to the larger domain of variable (Cronbach, 1971). The content validity of the results collected by the

questionnaire was evaluated by two independent experts (a lecturer of hearing-impaired students) who had knowledge of hearing-impaired, as well as experience in working with hearing-impaired population. The experts work as polytechnic lecturers and are expert in sign language. The questionnaire was evaluated and restructured for the respondents' easy understanding of the items (the questionnaire is provided in appendix A). Based on their corrections, the final written version of the questionnaire in the Malay language with a simpler structure of sentences were developed.

4.7 Descriptive Analysis

Based on the first objective of the study, the data were analyzed to obtain information regarding the level of cognitive ability dimensions, personality traits, psychological well-being dimensions, emotional intelligence dimensions and self-esteem of the hearing-impaired student. Each dimension score was obtained by summing the mean score for each of the items in the questionnaire.

4.7.1 Level of Cognitive Ability

The cognitive ability, memory and attention level was shown in Table 4.6. The study found that a total of eight students (5%) achieved a low level of cognitive ability, while a total of 89 students (55%) recorded a moderate level in cognitive ability and a total of 66 students (40%) have a high level of cognitive ability. Meanwhile, 60 students (36.8%) achieve high level in memory, 86 students (53%) achieve a moderate level of memory and the remaining 17 students (10%) achieve a low level in memory. Moreover, 53 students (33%) acquire a low level of attention, 35 students (21.5%) acquire a moderate level in attention dimension and 75 students (46%) acquire a high level of attention.

Table 4.6

Cognitive Ability Level based on Frequency and Percentage

Variable/ Dimensions	Level	Range (Mean)	Frequency	Percentage (%)
Cognitive ability	Low	1.00 – 2.33	8	5
	Moderate	2.34 – 3.66	89	55
Cognitive ability	High	3.67– 5.00	66	40
	Total		163	100
Memory	Low	1.00 – 2.33	17	10
	Moderate	2.34 – 3.66	86	53
	High	3.67– 5.00	60	36.8
	Total		163	100
Attention	Low	1.00 – 2.33	53	33
	Moderate	2.34 – 3.66	35	21.5
	High	3.67– 5.00	75	46
	Total		163	100

4.7.2 Level of Personality traits

Personality traitss result are demonstrated in table 4.7. The outcome reveals that majority of students achieve a moderate level for each dimension which are 111 students or 67.6% (neuroticism), 105 students or 63.9% (extraversion), 106 students or 64.4% (openness), 116 students or 70.7% (agreeableness) and 111 students or 67.6% (conscientiousness). Whereas, the high level for each personality traitss are 39 students or 23.7% (neuroticism), 52 students or 31.6% (extraversion), 48 students or 29.1% (openness), 39 students or 23.7% (agreeableness) or 44 students or 26.7% (conscientiousness). In addition, analysis showed that a low level for each personality traitss are 13 students or 7.9% (neuroticism), six students or 3.6% (extraversion), nine students or 5.4% (openness) and eight students or 4.8% for agreeableness and conscientiousness

Table 4.7

Personality traitss Level based on Frequency and Percentage

Variable/ Dimensions	Level	Range (Mean)	Frequency	Percentage (%)
Neuroticism	Low	1.00 – 2.33	13	7.9
	Moderate	2.34 – 3.66	111	67.6
	High	3.67– 5.00	39	23.7
	Total		163	100
Extraversion	Low	1.00 – 2.33	6	3.6
	Moderate	2.34 – 3.66	105	63.9
	High	3.67– 5.00	52	31.6
	Total		163	100
Openness	Low	1.00 – 2.33	9	5.4
	Moderate	2.34 – 3.66	106	64.4
	High	3.67– 5.00	48	29.1
	Total		163	100
Agreeableness	Low	1.00 – 2.33	8	4.8
	Moderate	2.34 – 3.66	116	70.7
	High	3.67– 5.00	39	23.7
	Total		163	100
Conscientiousness	Low	1.00 – 2.33	8	4.8
	Moderate	2.34 – 3.66	111	67.7
	High	3.67– 5.00	44	26.7
	Total		163	100

4.7.3 Level of Psychological Well-Being

Table 4.8 showed the level of psychological well-being and dimensions of autonomy, self-acceptance, positive relations with others, environmental mastery, purpose in life and personal growth of hearing-impaired students. A total of 141 students (86.3%) achieve a moderate level of psychological well-being. Meanwhile, 13 students (7.8%) achieve a low level in psychological well-being and nine students (5.4%) achieve a high level of psychological well-being. In addition, none of the students obtain a low level of autonomy. However, 133 students (81.6%) obtain a moderate level of autonomy and 30 students (18.4%) obtain high level in autonomy.

On the other hand, majority of students which is 124 students (76%) show a moderate level in self-acceptance, 35 students (21.4%) show a high level in self-acceptance and four students (2.5%) show a low level in self-acceptance. In positive relation with others dimension, only five students (3.1%) have a low positive relation with others while, 128 students (78.5%) have a moderate level and 30 students (18.4%) have a high level of positive relations with others.

A total of 139 students (85.2%) acquire a moderate score in environmental mastery. Only nine (5.6%) acquire a low score in environmental mastery and 15 students (9.1%) acquire a high score of environmental mastery. Also, the majority of students, 131 students (80.2 %) achieve a moderate score on purpose in life dimension. Meanwhile, 21 students (12.9%) achieve low score and 11 students (6.7%) achieve a high score on purpose in life. Next, the result on personal growth dimension shows that most of hearing-impaired 139 students (85.4%) obtain a moderate score of personal growth while, 13 students (7.9%) obtain high score and 11 students (6.7%) obtain a low score on personal growth.

Table 4.8

Psychological Well-Being Level based on Frequency and Percentage

Variable/ Dimensions	**Level**	**Range (Mean)**	**Frequency**	**Percentage (%)**
Psychological well-being	Low	1.00 – 2.68	13	7.8
	Moderate	2.68 – 4.34	141	86.3
	High	4.34 – 6.00	9	5.4
	Total		163	100
Autonomy	Low	1.00 – 2.68	0	0
	Moderate	2.68 – 4.34	133	81.6
	High	4.34 – 6.00	30	18.4
	Total		163	100

Table 4.8 *continued*..

Variable/ Dimensions	Level	Range (Mean)	Frequency	Percentage (%)
Self-Acceptance	Low	1.00 – 2.68	4	2.5
	Moderate	2.68 – 4.34	124	76
	High	4.34 – 6.00	35	21.4
	Total		163	100
Positive Relations with Others	Low	1.00 – 2.68	5	3.1
	Moderate	2.68 – 4.34	128	78.5
	High	4.34 – 6.00	30	18.4
	Total		163	100
Environmental Mastery	Low	1.00 – 2.68	9	5.6
	Moderate	2.68 – 4.34	139	85.2
	High	4.34 – 6.00	15	9.1
	Total		163	100
Purpose in Life	Low	1.00 – 2.68	21	12.9
	Moderate	2.68 – 4.34	131	80.2
	High	4.34 – 6.00	11	6.7
	Total			
Personal Growth	Low	1.00 – 2.68	11	6.7
	Moderate	2.68 – 4.34	139	85.4
	High	4.34 – 6.00	13	7.9
	Total			

4.7.4 Level of Emotional Intelligence

The emotional intelligence level with dimensions of intrapersonal, interpersonal, adaptability, stress management and general mood score are illustrated in table 4.9. According to table 4.9, the majority of 147 students (90%) achieve a moderate score of emotional intelligence while 14 students (8.4%) show a high score and only two students (1.2%) obtain a low score. Calculated based on the frequency and percentage, the majority of respondents achieve a moderate level of intrapersonal dimension which is 111 students (68%), low level with 31 students (18.9%) and high level with 21 students (12.9%).

Next, the frequency and percentage for interpersonal shows 88 students (54%) achieve a moderate level, six students (3.7%) obtain a low level and 69 students (42.2%) achieve a high level for interpersonal dimension. Whereas, 105 students (64.3%) achieve a moderate level for adaptability dimension, seven students (4.2%) show a low level and 51 (31.3%) obtain a high level. Also, 103 (63.1%) show a high level for stress management, 23 students (14.1%) obtain a low level and 37 students (22.8%) achieve a high level for stress management. Only three students (1.8%) show a low level for general mood, 42 students (25.7%) obtain a high level and most of the hearing-impaired students, which is 118 (72.4%) achieve a moderate level for general mood.

Table 4.9

Emotional Intelligence Level based on Frequency and Percentage

Variable/ Dimensions	Level	Range (Mean)	Frequency	Percentage (%)
Emotional Intelligence	Low	1.00 – 2.33	2	1.2
	Moderate	2.34 – 3.66	147	90
	High	3.67– 5.00	14	8.4
	Total		163	100
Intrapersonal	Low	1.00 – 2.33	31	18.9
	Moderate	2.34 – 3.66	111	68
	High	3.67– 5.00	21	12.9
	Total		163	100
Interpersonal	Low	1.00 – 2.33	6	3.7
	Moderate	2.34 – 3.66	88	54
	High	3.67– 5.00	69	42.2
	Total		163	100
Adaptability	Low	1.00 – 2.33	7	4.2
	Moderate	2.34 – 3.66	105	64.3
	High	3.67– 5.00	51	31.3
	Total		163	100
Stress management	Low	1.00 – 2.33	23	14.1
	Moderate	2.34 – 3.66	103	63.1
	High	3.67– 5.00	37	22.8
	Total		163	100

Table 4.9 *continued*..

Variable/ Dimensions	Level	Range (Mean)	Frequency	Percentage (%)
General Mood	Low	1.00 – 2.33	3	1.8
	Moderate	2.34 – 3.66	118	72.4
	High	3.67– 5.00	42	25.7
	Total		163	100

4.7.5 Level of Self-Esteem

Based on Table 4.10, the result found a total of 94 students (57.7%) with a low level of self-esteem while 64 students (39.3%) showed moderate level of self-esteem and only five students (3.1%) have high level of self-esteem.

Table 4.10

Self-Esteem Level based on Frequency and Percentage

Self-esteem	Range (Mean)	Frequency	Percentage
Low	1.00 - 2.00	94	57.7
Moderate	2.00 - 3.00	64	39.3
High	3.00 - 4.00	5	3.1
Total		163	100

4.8 Inferential Analysis

4.8.1 Test of Differences (t-test)

In this section, inferential statistical analyses were facilitated to achieve Objective two of the research. The main hypothesis one focuses on differential aspect to determine the differences of cognitive ability, personality traits, psychological well-being, emotional intelligence and self-esteem of hearing-impaired based on gender. Independent t-test was conducted to compare two groups accordingly. Detailed results of the analyses are shown according to hypotheses 1, 2, 3, 4 and 5 respectively.

Main Hypothesis 1:

There are significant differences of cognitive ability, personality traits, psychological well-being, emotional intelligence and self-esteem of hearing-impaired according to gender.

H1: There are significant differences of cognitive ability according to gender.

The findings showed that there was no significant difference (t= -.38, p> .05) of cognitive ability between both gender. As a result, hypothesis H1 was rejected, indicating that there was no significant difference of cognitive ability level between male and female respondents as depicted in Table 4.11.

Table 4.11

Cognitive Ability between Gender

	Gender	N	Mean	Std. Dev	*t*
Cognitive ability	Male	79.00	3.50	.79	-0.38
	Female	84.00	3.54	.78	

H2: There are significant differences of personality traits according to gender.

H2a: There are significant differences of neuroticism personality according to gender.

The findings revealed that there was no significant difference (t= .19, p> .05) of neuroticism personality between both gender. As a result, hypothesis H2a was rejected, indicating that there was no significant difference of neuroticism personality mean between male and female respondents as shown in Table 4.12.

Table 4.12

Neuroticism Personality between Gender

	Gender	N	Mean	Std. Dev	*t*
Neuroticism	Male	79.00	2.80	0.16	0.19
	Female	84.00	2.80	0.16	

H2b: There are significant differences of extraversion according to gender.

The results highlight that there was no significant difference (*t*= .37, *p*> .05) of extraversion personality between both gender. As highlighted in table 4.13, hypothesis H2b was rejected, indicating that there was no significant difference of extraversion personality mean between male and female respondents.

Table 4.13

Extraversion Personality between Gender

	Gender	N	Mean	Std. Dev	*t*
Extraversion	Male	79.00	3.37	0.27	0.37
	Female	84.00	3.36	0.23	

H2c: There are significant differences of openness personality according to gender.

Results revealed that there was no significant difference (*t*= -1.56, *p*> .05) of openness personality between both gender. With reference to the Table 4.14, hypothesis H2c was rejected, indicating that there was no significant difference of openness personality mean between male and female respondents.

Table 4.14

Openness Personality between Gender

	Gender	N	Mean	Std. Dev	*t*
Openness	Male	79.00	3.21	0.27	-1.56
	Female	84.00	3.28	0.27	

H2d: There are significant differences of agreeableness personality according to gender.

Analysis found that there was no significant difference (t= -1.73, p> .05) of agreeableness between both gender. It is evident from Table 4.15 that hypothesis H2d was rejected, indicating that there was no significant difference of agreeableness personality mean between male and female respondents.

Table 4.15

Agreeableness Personality between Genders

	Gender	N	Mean	Std. Dev	*t*
Agreeableness	Male	79.00	2.98	0.45	-1.73
	Female	84.00	3.11	0.47	

H2e: There are significant differences of conscientiousness personality according to gender.

The results revealed there was no significant difference (t= -.98, p> .05) of conscientiousness personality between both gender. As a result, hypothesis H2e was rejected, indicating that there was no significant difference of conscientiousness personality mean between male and female respondents as presented in Table 4.16.

Table 4.16

Conscientiousness Personality between Gender

	Gender	N	Mean	Std. Dev	*t*
Conscientiousness	Male	79.00	3.31	0.13	-0.98
	Female	84.00	3.33	0.12	

H3: There are significant differences of hearing impaired psychological well-being of hearing-impaired students according to gender.

The result indicated that there was no significant difference (t= -1.43, p> .05) of psychological well-being between both gender. Referring to table 4.17, hypothesis H3 was rejected, indicating that there was no significant difference of psychological well-being mean between male and female respondents.

Table 4.17

Psychological Well-Being between Gender

	Gender	N	Mean	Std. Dev	*t*
Psychological well-being	Male	79.00	3.09	0.40	-1.43
	Female	84.00	3.18	0.36	

H4: There are significant differences of emotional intelligence of hearing-impaired students according to gender.

The result showed that there was no significant difference (t= -.11, p> .05) of emotional intelligence between both gender. Referring to table 4.18, hypothesis H4 was rejected, indicating that there was no significant difference of emotional intelligence mean between male and female respondents.

Table 4.18

Emotional Intelligence between Gender

	Gender	N	Mean	Std. Dev	*t*
Emotional intelligence	Male	79.00	3.22	0.30	-0.11
	Female	84.00	3.23	0.29	

H5: There are significant differences of self-esteem of hearing-impaired students according to gender.

Referring to the table 4.19, it shows that the there was no significant difference (t= -1.02, p> .05) of self-esteem between both gender. In this regard, the table elaborates there was no significant difference of self-esteem mean between male and female respondents thus, hypothesis H5 was rejected.

Table 4.19

Self-Esteem between Gender

	Gender	N	Mean	Std. Dev	*t*
Self-esteem	Male	79.00	2.68	0.34	-1.02
	Female	84.00	2.73	0.24	

Main Hypothesis 2:

There are significant differences of cognitive psychology, personality traits, psychological well-being, emotional intelligence and self-esteem of hearing-impaired students according to parents' hearing status.

H6: There are significant differences of cognitive ability of hearing-impaired students according to parents' hearing status.

Referring to table 4.20, it shows that there was a significant difference (t= 3.79, p< .05) of self-esteem between parents' hearing status. In this regard, the table elaborates there was significant difference of self-esteem mean between normal and hearing-impaired parents' respondents. It shows that hearing-impaired with hearing-impaired parents have batter cognitive ability compared to hearing-impaired students with normal hearing parents. Thus, hypothesis H6 was accepted.

Table 4.20

Cognitive Ability based on Parents' Hearing Status

Cognitive ability	**Parents' hearing status**	**N**	**Mean**	**Std. Dev**	***t***
	Normal	136	3.39	0.67	3.79*
	Hearing-impaired	27	3.91	0.96	

Notes: *p< .05

H7: There are significant differences of the personality traits of hearing-impaired students according to parents' hearing status.

Next, hypothesis H7 was separated according to their personality traits. Hypotheses H7 (H7a, H7b, H7c, H7d, H7e) were developed to examine the significant difference of personality traits between normal and hearing-impaired parents' status.

H7a: There are significant differences of the neuroticism personality of hearing-impaired students according to parents' hearing status.

Referring to the table 4.19, it shows that there was no significant difference (t= -0.63, p> .05) of neuroticism between parents' hearing status. In this regard, the table elaborates there was no significant difference of neuroticism personality between

normal and hearing-impaired parents' respondents, thus the hypothesis H7a was rejected.

Table 4.21

Neuroticism Personality based on Parents' Hearing Status

	Parents' hearing status	N	Mean	Std. Dev	*t*
Neuroticism	Normal	136	2.79	0.54	-0.63
	Hearing-impaired	27	2.80	0.16	

H7b: There are significant differences of the extraversion personality of hearing-impaired students according to parents' hearing status.

Next, the differences of the extraversion personality based on parents' hearing status was exhibited in table 4.22. Result shows that there was no significant difference (t= 0.12, p> .05) of extraversion between parents' hearing status. In this regard, the table elaborates there was no significant difference of extraversion personality according to normal and hearing-impaired parents' status, thus, hypothesis H7b was rejected.

Table 4.22

Extraversion Personality based on Parents' Hearing Status

	Parents' hearing status	N	Mean	Std. Dev	*t*
Extraversion	Normal	136	3.36	0.26	0.12
	Hearing-impaired	27	3.31	0.22	

H7c: There are significant differences of the openness personality of hearing-impaired students according to parents' hearing status.

T-test was performed to analyze the difference of openness personality level between the groups of parents' hearing status. Referring to table 4.23 results found that there was no significant difference (t= 1.48, p> .05) of openness personality according to parents' hearing status. In this regard, the table elaborates that there was no significant difference of openness personality between normal and hearing-impaired parents' respondents, thus, hypothesis H7c was rejected.

Table 4.23

Openness Personality based on Parents' Hearing Status

	Parents' hearing status	N	Mean	Std. Dev	*t*
Openness	Normal	136	3.23	0.27	1.48
	Hearing-impaired	27	3.22	0.26	

H7d: There are significant differences of the agreeableness personality of hearing-impaired students according to parents' hearing status.

T-test was conducted to investigate the difference of agreeableness personality based on parents' hearing status. Table 4.24 highlights that no significant difference (t= 1.04, p> .05) of agreeableness personality between normal and hearing-impaired parents' status, thus, hypothesis H7d was rejected.

Table 4.24

Agreeableness Personality based on Parents' Hearing Status

	Parents' hearing status	N	Mean	Std. Dev	*t*
Agreeableness	Normal	136	3.07	0.47	1.04
	Hearing-impaired	27	2.94	0.42	

H7e: There are significant differences of the conscientiousness personality of hearing-impaired students according to parents' hearing status.

T-test was carried out to examine the difference of conscientiousness personality of hearing-impaired students according to parents' hearing status. Table 4.25 showed the explanation of the result revealing no significant difference (t= 1.04, p> .05) of conscientiousness between normal and hearing-impaired parents' status, thus, hypothesis H7e was rejected.

Table 4.25

Conscientiousness Personality Based on Parents' Hearing Status

	Parents' hearing status	N	Mean	Std. Dev	*t*
Conscientiousness	Normal	136	3.32	0.11	1.04
	Hearing-impaired	27	3.30	0.12	

H8: There are significant differences of psychological well-being of hearing-impaired students according to parents' hearing status.

Table 4.26 described psychological well-being of hearing-impaired students based on parents' hearing status. The result revealed that there was no significant difference (t= 1.75, p> .05) of psychological well-being between normal and hearing-impaired parents' status. Thus, hypothesis H8 was rejected.

Table 4.26

Psychological Well-Being based on Parents' Hearing Status

	Parents' hearing status	N	Mean	Std. Dev	*t*
Psychological well-being	Normal	136	3.13	0.40	1.75
	Hearing-impaired	27	2.99	0.52	

H9: There are significant differences of emotional intelligence of hearing-impaired students according to parents' hearing status.

T-test was implemented to scrutinize the difference of emotional intelligence according to parents' hearing status. Table 4.27 visualizes results that there is no significant difference of emotional intelligence between normal and hearing-impaired parents' status (t= 0.78, p> .05). Thus, hypothesis H9 was rejected.

Table 4.27

Emotional Intelligence Based on Parents' Hearing Status

	Parents' hearing status	N	Mean	Std. Dev	*t*
Emotional intelligence	Normal	136	3.21	0.34	0.78
	Hearing-impaired	27	3.26	0.33	

H10: There are significant differences of self-esteem of hearing-impaired students according to parents' hearing status.

Lastly, t-test was performed to analysis the influence of parents' hearing status on respondents' self-esteem. Results found that there was significant difference of self-esteem between normal and hearing-impaired parents' status (t= 2.16, p< .05). It shows that students with hearing-impaired parents have high self-esteem compared to hearing-impaired students with normal hearing-parents. Thus, hypothesis H10 was accepted. Detailed results are shown in table 4.28.

Table 4.28

Self-esteem based on Parents' Hearing Status

	Parents' hearing status	N	Mean	Std. Dev	*t*
Self-esteem	Normal	136	2.70	0.32	2.16*
	Hearing-impaired	27	2.83	0.39	

Notes: $*p<.05$

4.8.2 Test on relationships (Pearson Correlation)

Hypotheses on Correlation:

A correlational analysis was used to explain the relationships among the variables in this present study. Researcher utilised the Pearson correlation test to explore the correlation coefficient among the variables. According to Sekaran and Bougie, (2010) and Creswell (2012), the matrix of Pearson correlations indicates the direction, strength, and significance of a bivariate relationship among all variables that are measured at an interval or ratio level. The developed hypotheses were focused on the correlational aspect of the constructs and matched the objective three of the study which was to examine the association between self-esteem, personality traits, cognitive ability dimensions, psychological well-being dimensions and emotional intelligence dimensions. The rules of thumb for correlation coefficient size are based on Hair, Money, Samouel, & Page (2007) with the *r* value 0.00 (Slight, almost negligible); 0.21 (Small but definite relationship); 0.41 (Moderate); 0.71 (High); and 0.91 (very strong).

Main Hypothesis 3:

Hearing-impaired cognitive ability dimensions, personality traits, psychological well-being dimensions and emotional intelligence is related significantly to self-esteem

H11: Hearing-impaired cognitive ability dimensions is related significantly to self-esteem.

H11a: Hearing-impaired memory is related significantly to self-esteem.

H11b: Hearing-impaired attention dimensions is related significantly to self-esteem.

The results of correlation are shown in Table 4.29. Overall, all constructs showed no significant association between cognitive ability, memory and attention towards self-esteem at $p > .05$ level. This indicate that there were no correlations between cognitive ability dimensions (memory and attention) and self-esteem. Thus, hypotheses H11, H11a and H11b were rejected.

Table 4.29

Correlation Result between Cognitive Ability Dimensions and Self-Esteem

	1	**2**	**3**	**4**
Self-Esteem	1			
Cognitive Ability	-.079	1		
Memory	.019	.748**	1	
Attention	-.138	.709**	.061	1

Notes: ** $p<.01$

H12: Hearing-impaired neuroticism personality is significantly related to self-esteem.

H13: Hearing-impaired extraversion personality is significantly related to self-esteem.

H14: Hearing-impaired openness personality is significantly related to self-esteem.

H15: Hearing-impaired agreeableness personality is significantly related to self-esteem.

H16: Hearing-impaired conscientiousness personality is significantly related to self-esteem.

Based on table 4.30, results showed correlations with personality traits at various levels. Extraversion personality related significantly to self-esteem with small but definite relationship level (r= .27, p< .05) and conscientiousness personality correlated very slightly to self-esteem level (r= .18, p< .05). Meanwhile, agreeableness personality connected at moderate level to self-esteem (r= .43, p< .05). However, neuroticism personality and openness personality are not significantly correlated with self-esteem.

Findings reveal that an increase in extraversion personality, agreeableness personality and conscientiousness personality were correlated with increases in self-esteem. However, increases in neuroticism personality and openness personality were not correlated with increases in self-esteem. Thus, hypotheses H13, H15 and H16 are accepted and hypotheses H12 and H14 are rejected.

Table 4.30

Correlation between Personality traits and Self-Esteem

	1	**2**	**3**	**4**	**5**	**6**
Self-Esteem	1					
Neuroticism	.03	1				
Extraversion	.27**	.06	1			
Openness	.10	.09	.18*	1		
Agreeableness	.43**	-.08	.34**	.09	1	
Conscientiousness	.18*	.16*	.14	.11	.00	1

Notes: * $p < .05$, ** $p < .01$

H17: Hearing-impaired psychological well-being dimensions is significantly related to self-esteem.

H17a: Hearing-impaired autonomy is significantly related to self-esteem.

H17b: Hearing-impaired self-acceptance is significantly related to self-esteem.

H17c: Hearing-impaired positive relations with others is significantly related to self-esteem.

H17d: Hearing-impaired environmental mastery is significantly related to self-esteem.

H17e: Hearing-impaired purpose in life is significantly related to self-esteem.

H17f: Hearing-impaired personal growth is significantly related to self-esteem.

Results on relationship between psychological well-being dimensions and self-esteem are illustrated in table 4.31. Overall psychological well-being was related at moderate level with self-esteem ($r = .42$, $p < .05$). Self-acceptance, positive relation with others and environmental mastery were related significantly to self-esteem at small but definite relationship level ($r = .31$, $p < .05$), ($r = .36$, $p < .05$) and ($r = .27$, $p < .05$). Meanwhile, autonomy show a low correlation to self-esteem ($r = .15$, $p < .05$). These

findings demonstrate all variables are correlated positively with self-esteem. Therefore, an increase in autonomy, self-acceptance, positive relations with others, environmental mastery and personal growth will increases their self-esteem. Thus, hypotheses H17 (H17a, H17b, H17c, H17d, H17e, H17f) are accepted.

Table 4.31

Correlation between Psychological Well-Being Dimensions and Self-Esteem

	1	2	3	4	5	6	7	8
Self-Esteem	1							
Psychological well-being	.42**	1						
Autonomy	.15*	.39**	1					
Self-Acceptance	.31**	.58**	.31**	1				
Positive Relations with Others	.36**	.58**	.32**	.47**	1			
Environmental Mastery	.27**	.61**	.28**	.47**	.32**	1		
Purpose in Life	.29**	.62**	.13	.40**	.39**	.46**	1	
Personal Growth	.26**	.62**	.16*	.40**	.37**	.50**	.52**	1

Notes: * $p < .05$, ** $p < .01$

H18: Hearing-impaired emotional intelligence dimensions are significantly related to self-esteem.

H18a: Hearing-impaired intrapersonal dimension is significantly related to self-esteem.

H18b: Hearing-impaired interpersonal dimension is significantly related to self-esteem.

H18c: Hearing-impaired adaptability dimension is significantly related to self-esteem.

H18d: Hearing-impaired stress management dimension is significantly related to self-esteem.

H18e: Hearing-impaired general mood dimension is significantly related to self-esteem.

Table 4.32 revealed the relationship on emotional intelligence dimensions and self-esteem. Overall emotional intelligence related significantly at small but definite relationship with self-esteem, (r= .42, p< .05). Also, interpersonal and general mood were related significantly to self-esteem at small but definite relationship level (r= .31, p< .05) and (r= .36, p< .05). These results indicated there were positive relationships between overall emotional intelligence, interpersonal and general mood with self-esteem.

However, intrapersonal, adaptability and stress management were not correlated significantly with self-esteem. Findings explain that an increase in overall emotional intelligence, interpersonal and general mood will increase in their self-esteem. However, increases in intrapersonal, adaptability and stress management were not correlated with increases in self-esteem. Thus, hypotheses H18, H18b and H18e were accepted, whereas hypotheses H18a, H18c and H18d were rejected.

Table 4.32

Correlation between Emotional Intelligence Dimensions and Self-Esteem

	1	**2**	**3**	**4**	**5**	**6**	**7**
Self-Esteem	1						
Emotional Intelligence	.22**	1					

Table 4.32 *continued..*

	1	2	3	4	5	6	7
Intrapersonal	-0.13	.51**	1				
Interpersonal	.31**	.52**	-.23**	1			
Adaptability	0.07	.37**	-.29**	.51**	1		
Stress Management	0.06	.54**	.68**	-.19*	-.34**	1	
General Mood	.26**	.55**	-0.05	.51**	.42**	0	1

Notes: * $p<.05$, ** $p<.01$

4.8.3 Test on moderation (Regression analysis)

Hierarchical regression analysis was used to test the moderating variables on the relationship between the independent and dependent variables. Hierarchical regression or moderator regression analysis is considered to be an appropriate method in examining the moderating variables. According to Baron and Kenny (1986), the moderator hypothesis is supported if the interaction (Path c) is significant. There may also be significant main effects for the predictor and the moderator (Paths a and b), but these are not directly relevant conceptually to testing the moderator hypothesis.

In addition to these basic considerations, it is desirable that the moderator variable be uncorrelated with both the predictor and the dependent variable to provide a clearly interpretable interaction term. The categorize of the effect size are based on Cohen (1992) with the R^2 value 0.1 (small); 0.3 (medium) and 0.5 (large). Therefore, in this study researcher performed the hierarchical regression analysis to test the moderating effect of emotional intelligence on the relationships between independent variables (cognitive ability, personality traits and psychological well-being) and self-esteem as dependent variable. Finally, the result of this analysis has provided the answer to the hypothesis and objective four in this study.

Main Hypothesis 4:

Emotional intelligence moderates the relationship between cognitive ability dimensions and self-esteem.

H19: Emotional intelligence moderates the relationship between memory and self-esteem.

Result on the moderating role of emotional intelligence on memory and self-esteem is indicated in table 4.33. In the model summary table, result displays an R^2 value of 0.12 which indicates that 12% change in self-esteem variable due to changes in moderating variables and their impact on self-esteem is small (R^2<. 15). Based on the results' table, there was a significant relationship between the dependent variable and moderator at significance level (p< .05).

Table 4.33

Hierarchical Multiple Regression between Memory and Self-Esteem

	R^2	R^2 Change	*B*	*t*
Step 1 Memory	0.05	0.04	0.95	4.03*
Step 2 Memory Emotional intelligence	0.12	0.07	0.22	2.87*
F	7.34			
df	3,159			
Sig	0.00			
Durbin Watson	1.78			

Notes: * p< .05

The entry of independent variable, which is memory into the regression model after controlling the moderating variable, predicted as much as 7% of additional variance (*R* squared change = .07) in the dependent variable. Hence, the inclusion of emotional

intelligence into hierarchical multiple regression model contribute a small impact on self-esteem ($R^2 < .15$). The Durbin-Watson value of 1.78 is within the acceptable range of 1.50 ± 2.50, which indicates that the assumption of independence of error terms is not violated.

In addition, the interaction of moderating variable (emotional intelligence) and independent variable (memory) also showed a significant result [F (3,159) = 7.34, $p < .05$]. Beta value of emotional intelligence was significant ($\beta = .22$, $t = 2.87$, $p < .05$) and confirms that emotional intelligence is a significant moderator of the relationship between memory and self-esteem. For the independent variable, memory is a significant independent variable with a large beta ($\beta = .95$, $t = 4.03$, $p < .05$)

Therefore, hierarchical multiple regression model obtained from this study is:

Self-esteem = +.22 emotional intelligence +.95 memory

Results of this study showed that memory have a significant impact on hearing-impaired students' self-esteem. Positive beta value indicates that the higher the memory, the higher the self-esteem of students. In addition, the moderating variable (emotional intelligence) also affect self-esteem respondents with small impact and positive value, the higher the emotional intelligence the higher self-esteem. Thus, hypothesis H19 was accepted.

H20: Emotional intelligence moderates the relationship between attention and self-esteem.

Table 4.34 exhibits the result on moderating role of emotional intelligence on attention and self-esteem. In the model summary table, result displays an R^2 value of 0.11 which indicates that 11% change in self-esteem variable due to changes in moderator variables and their impact on self-esteem is small ($R^2 < .15$). Based on the results' table, there was a significant relationship between the dependent variable moderator variable at significance level ($p < .05$).

Table 4.34

Hierarchical Multiple Regression between Attention and Self-Esteem

	R^2	R^2 Change	*B*	*t*
Step 1 Attention	0.07	0.05	0.24	3.15*
Step 2 Attention Emotional intelligence	0.11	0.04	0.22	2.41*
F	7.34			
df	3,159			
Sig	0.00			
Durbin Watson	1.78			

Notes: * $p < .05$

The entry of independent variable, which is attention into the regression model after controlling the moderating variable, predicted as much as 4% of additional variance (*R* squared change = .04) in the dependent variable. Hence, the inclusion of emotional intelligence into hierarchical multiple regression model contribute a small impact on self-esteem ($R^2 < .15$). The Durbin-Watson value of 1.78 is within the acceptable range

of 1.50 ± 2.50, which indicates that the assumption of independence of error terms is not violated.

In addition, the interaction of emotional intelligence as moderating variable and attention as an independent variable also showed a significant result [F (3,159) = 6.988, p< .05]. Beta value of emotional intelligence was significant (β = .22, t = 2.41, p< .05) and confirms that emotional intelligence is a significant moderator of the relationship between attention and self-esteem. For the independent variable, attention is a significant independent variable with a large beta (β = .24, t = 3.15, p< .05).

Therefore, hierarchical multiple regression model obtained from this study is:

Self-esteem = +.22 emotional intelligence +.24 attention

Results of this study showed that memory have a significant impact on hearing-impaired students' self-esteem. Positive beta value indicates that the higher the memory, the higher the self-esteem of students. In addition, the moderating variable (emotional intelligence) also affect self-esteem respondents with great impact and positive value, the higher the emotional intelligence the higher self-esteem. Thus, hypothesis H20 was accepted.

Main Hypothesis 5:

Emotional intelligence moderates the relationship between personality traits and self-esteem.

H21: Emotional intelligence moderates the relationship between neuroticism and self-esteem

Result on moderating role of emotional intelligence on memory and self-esteem is presented in table 4.35. In the model summary table, result display an R^2 value of 0.06 which indicates that 6% change in self-esteem variable due to changes in moderating variables and their impact on self-esteem is small ($R^2 < .15$). Based on the results' table, there was a significant relationship between the dependent variable and moderator

Table 4.35

Hierarchical Multiple Regression between Neuroticism Personality and Self-Esteem

	R^2	R^2 *Change*	*B*	*t*
Step 1 Neuroticism	0.05	0.05	-0.24	-2.88*
Step 2 Neuroticism Emotional intelligence	0.06	0.01	0.22	2.93*
F	3.35			
df	-3,159			
Sig	0.02			
Durbin Watson	1.73			

Notes: * $p < .05$

The entry of independent variable, which is neuroticism into the regression model after controlling the moderating variable, predicted as much as 1% of additional variance (*R* squared change = .01) in the dependent variable. Hence, the inclusion of emotional intelligence into hierarchical multiple regression model contribute a small impact on

self-esteem (R^2< .15). The Durbin-Watson value of 1.73 is within the acceptable range of 1.50 ± 2.50, which indicates that the assumption of independence of error terms is not violated.

In addition, the interaction of moderating variable (emotional intelligence) and independent variable (neuroticism) also showed a significant result [F (3,159) = 3.35, p< .05]. Beta value of emotional intelligence was significant (β = .0.22, t = 2.93, p< .05) and confirms that emotional intelligence is a significant moderator of the relationship between neuroticism and self-esteem. For the independent variable, neuroticism is a significant independent variable with a large beta (β = -.24, t =-2.88, p < .05).

Therefore, hierarchical multiple regression model obtained from this study is:

Self-esteem = +.22 emotional intelligence -.24 neuroticism

Results of this study showed that neuroticism have a significant impact on hearing-impaired students' self-esteem. Negative beta value indicates that the higher the neuroticism, the lower the self-esteem of students. In addition, the moderating variable (emotional intelligence) also affect self-esteem respondents with great impact and positive value, the higher the emotional intelligence the higher self-esteem. Thus, hypothesis H21 was accepted.

H22: Emotional intelligence moderates the relationship between extraversion personality and self-esteem.

Table 4.36 depicts the result on the moderating role of emotional intelligence on extraversion personality and self-esteem. In the model summary table, result display an R^2 value of 0.12 which indicates that 12% change in self-esteem variable due to changes in moderating variables and their impact on self-esteem is small ($R^2 < .15$). Based on the results' table, there was a significant relationship between the dependent variable moderator and variable at significance level ($p < .05$).

Table 4.36

Hierarchical Multiple Regression between Extraversion Personality and Self-Esteem

	R^2	R^2 Change	*B*	*t*
Step 1 Extraversion	0.31	0.023	0.21	2.02*
Step 2 Extraversion Emotional intelligence	0.12	0.07	-0.28	-0.19
F	5.97			
df	-3,159			
Sig	0.84			
Durbin Watson	1.73			

Notes: * $p < .05$

The entry of independent variable, which is extraversion personality into the regression model after controlling the moderating variable, predicted as much as 7% of additional variance (*R* squared change = .07) in the dependent variable. Hence, the inclusion of emotional intelligence into hierarchical multiple regression model contribute a very small impact on self-esteem ($R^2 < .15$). The Durbin-Watson value of 1.73 is within the acceptable range of 1.50 ± 2.50, which indicates that the assumption of independence of error terms is not violated.

In addition, the interaction of moderating variable (emotional intelligence) and independent variable (extraversion personality) also showed a non-significant result [F (3,159) = 5.97, p> .05]. Beta value of emotional intelligence was not significant (β =-0.28, t =0.19, p> .05) and confirms that emotional intelligence is not a significant moderator of the relationship between extraversion personality and self-esteem. For the independent variable, extraversion personality is a significant independent variable with a large beta (β = .21, t = 2.02, p<.05)

Results of this study showed that extraversion have a significant impact on hearing-impaired students' self-esteem. Positive beta value indicates that the higher the extraversion, the higher the self-esteem of students. However, the moderating variable (emotional intelligence) do not affect respondents' self-esteem. Thus, hypothesis H22 was rejected.

H23: Emotional intelligence moderates the relationship between openness personality and self-esteem

Table 4.37, highlights the result on the moderating role of emotional intelligence on openness personality and self-esteem. In the model summary table, result display an R^2 value of 0.10 which indicates that 10% change in self-esteem variable due to changes in moderator variables and their impact on self-esteem is small (R^2< .15). Based on the table results, there was a significant relationship between the dependent variable moderator and variable at significance level (p < .05).

Table 4. 37

Hierarchical Multiple Regression between Openness Personality and Self-Esteem

	R^2	R^2 Change	*B*	*t*
Step 1 Openness	0.05	0.04	0.10	2.63*
Step 2 Openness Emotional intelligence	0.10	0.05	0.21	2.43*
F	6.12			
df	(3,159)			
Sig	0.001			
Durbin Watson	1.81			

Notes: * $p < .05$

The entry of independent variable, which is openness into the regression model after controlling the moderating variable, predicted as much as 5% of additional variance (*R* squared change = .05) in the dependent variable. Hence, the inclusion of emotional intelligence into hierarchical multiple regression model contribute a small impact on self-esteem ($R^2 < .15$). The Durbin-Watson value of 1.81 is within the acceptable range of 1.50 ± 2.50, which indicates that the assumption of independence of error terms is not violated.

In addition, the interaction of moderating variable (emotional intelligence) and independent variable (openness personality) also showed a significant result [F (3,159) = 6.12, $p < .05$]. Beta value of emotional intelligence was significant ($\beta = .21$, $t = 2.43$, $p < .05$) and confirms that emotional intelligence is a significant moderator of the relationship between openness personality and self-esteem. For the independent variable, openness personality is a significant independent variable with a moderate beta ($\beta = .10$, $t = 2.63$, $p < .05$).

Therefore, hierarchical multiple regression model obtained from this study is:

Self-esteem = +.21 emotional intelligence +.10 openness personality

Results of this study showed that openness personality have a significant impact on hearing-impaired students' self-esteem. Positive beta value indicates that the higher the openness personality, the higher the self-esteem of students. In addition, the moderating variable (emotional intelligence) also affect self-esteem respondents with small impact and positive value, the higher the emotional intelligence the higher self-esteem. Thus, hypothesis H23 was accepted.

H24: Emotional intelligence moderates the relationship between agreeableness personality and self-esteem

Table 4.38 display the result on moderating role of emotional intelligence on agreeableness personality and self-esteem. In the model summary table, result display an R^2 value of 0.10 which indicates that 10% change in self-esteem variable due to changes in moderator variables and their impact on self-esteem is small (R^2 <.15). Based on the results' table, there was no significant relationship between the dependent variable and moderator variable at significance level (p> .05).

Table 4.38

Hierarchical Multiple Regression between Agreeableness Personality and Self-Esteem

	R^2	R^2 Change	*B*	*t*
Step 1 Agreeableness	0.19	0.006	0.41	5.45*

Table 4.38 *continued*..

	R^2	R^2 Change	*B*	*t*
Step 2	0.19	0.006	0.41	5.45*
Agreeableness				
Emotional intelligence				
F	13.63			
df	(3,159)			
Sig	0.28			
Durbin Watson	1.77			

Notes: * $p < .05$

The entry of independent variable, which is memory into the regression model after controlling the moderating variable, predicted as much as 0.7% of additional variance (*R* squared change = .007) in the dependent variable. Hence, the inclusion of emotional intelligence into hierarchical multiple regression model contribute a very small and no impact on self-esteem ($R^2 < .2$). The Durbin-Watson value of 1.77 is within the acceptable range of 1.50 ± 2.50, which indicates that the assumption of independence of error terms is not violated.

On the other hand, the interaction of moderating variable (emotional intelligence) and independent variable (agreeableness personality) showed no significant result [F (3,159) = 13.63, $p > .05$]. Beta value of emotional intelligence was not significant with $p > .05$ which confirms that emotional intelligence was not a significant moderator of the relationship between agreeableness personality and self-esteem. For the independent variable, agreeableness personality is a significant independent variable with ($\beta = .41$, $t = 5.45$, $p < .05$).

Results of this study showed that agreeableness personality have a significant impact on hearing-impaired students' self-esteem. However, the moderating variable

(emotional intelligence) do not effect respondents' self-esteem. In addition, the interaction of emotional intelligence and agreeableness personality do not contribute towards a significant result on self-esteem. Thus, the interaction of emotional intelligence and agreeableness personality did not contribute to the model. Therefore, hypothesis H24 was rejected.

H25: Emotional intelligence moderates the relationship between conscientiousness personality and self-esteem.

The table 4.39 visualize the result on moderating role of emotional intelligence on conscientiousness personality and self-esteem. In the model summary table, result display an R^2 value of 0.08 which indicates that 8% change in self-esteem variable due to changes in moderator variables and their impact on self-esteem is small ($R^2 < .15$). Based on the table results' table, there was a significant relationship between the dependent variable moderator and variable at significance level ($p < .05$).

Table 4.39

Hierarchical Multiple Regression Result between Conscientiousness Personality and Self-Esteem

	R^2	R^2 Change	*B*	*t*
Step 1 Conscientiousness	0.03	0.03	0.18	2.37*
Step 2 Conscientiousness Emotional intelligence	0.08	0.05	0.21	2.81*
F	4.86			
df	(3,159)			
Sig	0.01			
Durbin Watson	1.85			

Notes: * $p < .05$

The entry of independent variable, which is conscientiousness personality into the regression model after controlling the moderator variable, predicted as much as 5% of additional variance (*R* squared change = .05) in the dependent variable. Hence, the inclusion of emotional intelligence into hierarchical multiple regression model contribute a very small impact on self-esteem ($R^2 < .15$). The Durbin-Watson value of 1.85 is within the acceptable range of 1.50 ± 2.50, which indicates that the assumption of independence of error terms is not violated.

In addition, the interaction of moderating variable (emotional intelligence) and independent variable (conscientiousness personality) also showed a significant result [F (3,159) = 4.86, $p < .05$]. Beta value of emotional intelligence was significant with (β = .21, t = 2.81, $p < .05$) and confirms that emotional intelligence was a significant moderator of the relationship between conscientiousness personality and self-esteem. For the independent variable, conscientiousness personality is a significant independent variable with a moderate beta (β = 18, t = 2.37, $p < .05$).

Therefore, hierarchical multiple regression model obtained from this study is:

Self-esteem = +.21 emotional intelligence +.18 conscientiousness personality

Results of this study showed that conscientiousness personality have a significant impact on hearing-impaired students' self-esteem. Positive beta value indicates that the higher the conscientiousness personality, the higher the self-esteem of students. In addition, the moderating variable (emotional intelligence) also affect self-esteem

respondents with very small impact and positive value, the higher the emotional intelligence the higher self-esteem. Thus, hypothesis H25 was accepted.

Main Hypothesis 6:

Emotional intelligence moderates the relationship between psychological well-being dimensions and self-esteem.

H26: Emotional intelligence moderates the relationship between autonomy and self-esteem.

Result on the moderating role of emotional intelligence on autonomy and self-esteem is indicated in table 4.40. In the model summary table, result display an R^2 value of 0.063 which indicates that 6.3% change in self-esteem variable due to changes in moderator variables and their impact on self-esteem is small ($R^2 < .15$). Based on the results' table, there was a significant relationship between the dependent variable and moderator variable at significance level ($p < .05$).

Table 4.40

Hierarchical Multiple Regression Result between Autonomy and Self-Esteem

	R^2	R^2 Change	*B*	*t*
Step 1 Autonomy	0.025	0.025	0.16	2.04*
Step 2 Autonomy Emotional intelligence	0.063	0.038	0.20	2.53*
F	3.58			
df	(3,159)			
Sig	0.01			
Durbin Watson	1.70			

Notes: * $p < .05$

The entry of independent variable, which is autonomy into the regression model after controlling the moderating variable, predicted as much as 3.8% of additional variance (*R* squared change = .038) in the dependent variable. Hence, the inclusion of emotional intelligence into hierarchical multiple regression model contribute a very small impact on self-esteem ($R^2 < .15$). The Durbin-Watson value of 1.70 is within the acceptable range of 1.50 ± 2.50, which indicates that the assumption of independence of error terms is not violated.

In addition, the interaction of moderating variable (emotional intelligence) and independent variable (autonomy) also showed a significant result [F (3,159) = 3.58, p <.05]. Beta value of emotional intelligence was significant (β = .20, t = 2.53, p<.05) confirms that emotional intelligence is a significant moderator of the relationship between autonomy and self-esteem. For the independent variable, autonomy is a significant independent variable with a moderate beta (β = .16, t = 2.04, p<.05).

Therefore, hierarchical multiple regression model obtained from this study is:

Self-esteem = +.20 emotional intelligence +.16 autonomy

Results of this study showed that autonomy have a very small impact on hearing-impaired students' self-esteem. Positive beta value indicates that the higher the autonomy, the higher the self-esteem of students. In addition, the moderating variable (emotional intelligence) also affect self-esteem respondents with significant impact and positive value, the higher the emotional intelligence the higher self-esteem. Thus, hypothesis H26 was accepted.

H27: Emotional intelligence moderates the relationship between self-acceptance and self-esteem

Result on the moderating role of emotional intelligence on self-acceptance and self-esteem as presented in table 4.41. In the model summary table, result display an R^2 value of 0.113 which indicates that 11.3% change in self-esteem variable due to changes in moderator variables and their impact on self-esteem is small ($R^2 < .15$). Based on the results' table, there was a significant relationship between the dependent variable and moderator variable at significance level ($p < .05$).

Table 4.41

Hierarchical Multiple Regression between Self-Acceptance and Self-Esteem

	R^2	R^2 Change	*B*	*t*
Step 1 Self-acceptance	0.113	0.014	0.32	4.21*
Step 2 Self-acceptance Emotional intelligence	0.114	0.001	0.13	1.59
F	6.83			
df	3,159			
Sig	0.11			
Durbin Watson	1.68			

Notes: * $p < .05$

The entry of independent variable, which is self-acceptance into the regression model after controlling the moderating variable, predicted as much as 0.1% of additional variance (*R* squared change = .001) in the dependent variable. Hence, the inclusion of emotional intelligence into hierarchical multiple regression model contribute a very small impact on self-esteem ($R^2 < .15$). The Durbin-Watson value of 1.68 is within the

acceptable range of 1.50 ± 2.50, which indicates that the assumption of independence of error terms is not violated.

However, the interaction of moderating variable (emotional intelligence) and independent variable (self-acceptance) showed a non-significant result with $p > .05$. Result indicate that emotional intelligence was not a significant moderator of the relationship between self-acceptance and self-esteem with $p > .05$. For the independent variable, self-acceptance was a significant independent variable ($\beta = .32$, $t = 4.21$, $p < .05$). Therefore, the interaction of emotional intelligence and self-acceptance did not contribute to the model. Thus, hypothesis H27 was rejected.

H28: Emotional intelligence moderates the relationship between positive relations with others and self-esteem

Detailed result on the moderating role of emotional intelligence on positive relation with others and self-esteem is shown in table 4.42. In the model summary table, result display an R^2 value of 0.18 which indicates that 18% change in self-esteem variable due to changes in moderator variables and their impact on self-esteem is moderate ($R^2 > .15$). Based on the table results, there was a significant relationship between the dependent variable and moderator variable at significance level ($p < .05$).

Table 4.42

Hierarchical Multiple Regression between Positive Relations with Others and Self-Esteem

	R^2	R^2 Change	*B*	*t*
Step 1 Positive relation with others	0.15	0.02	0.36	4.94*

Table 4.42 *continued..*

	R^2	R^2 Change	*B*	*t*
Step 2 Positive relation with others Emotional intelligence	0.18	0.03	0.15	2.05*
F	11.92			
df	(3,159)			
Sig	0.00			
Durbin Watson	1.57			

Notes: * $p < .05$

The entry of independent variable, which is positive relation with others into the regression model after controlling the moderating variable, predicted as much as 3% of additional variance (*R* squared change = .03) in the dependent variable. Hence, the inclusion of emotional intelligence into hierarchical multiple regression model contribute a very small impact on self-esteem ($R^2 < .15$). The Durbin-Watson value of 1.57 is within the acceptable range of 1.50 ± 2.50, which indicates that the assumption of independence of error terms is not violated.

In addition, the interaction of moderating variable (emotional intelligence) and independent variable (positive relation with others) also showed a significant result [F (3,159) = 11.92, $p < .05$]. Beta value of emotional intelligence was significant ($\beta = .15$, $t = 2.05$, $p < .05$) and confirms that emotional intelligence is a significant moderator of the relationship between positive relation with others and self-esteem. For the independent variable, self-acceptance is a significant independent variable with a moderate beta ($\beta = .36$, $t = 4.94$, $p < .05$).

Therefore, hierarchical multiple regression model obtained from this study is:

Self-esteem = +.15 emotional intelligence +.36 positive relation with others

Results of this study indicate that positive relation with others have significant impact on hearing-impaired students' self-esteem. In addition, the moderating variable (emotional intelligence) affect respondents' self-esteem with very small impact and positive value, the higher the emotional intelligence the higher self-esteem. In addition, the interaction of emotional intelligence and positive relation with others contribute a significant result and small impact on self-esteem. Thus, the interaction of emotional intelligence and positive relation with others contribute to the model. Therefore, hypothesis H28 is accepted.

H29: Emotional intelligence moderates the relationship between environmental mastery and self-esteem.

Table 4.43 show the result on the moderating role of emotional intelligence on environmental mastery and self-esteem. In the model summary table, result display an R^2 value of 0.09 which indicates that 9% change in self-esteem variable due to changes in moderator variables and their impact on self-esteem is small ($R^2 < .15$). Based on table results, there was a significant relationship between the dependent variable and moderator variable at significance level ($p < .05$).

Table 4.43

Hierarchical Multiple Regression between Environmental Mastery and Self-Esteem

	R^2	R^2 Change	*B*	*t*
Step 1 Environmental mastery	0.07	0.75	0.27	3.62*

Table 4.42 *continued*..

	R^2	R^2 Change	*B*	*t*
Step 2	0.09	0.02	0.16	2.03*
Environmental mastery				
Emotional intelligence				
F	5.86			
df	3,159			
Sig	0.04			
Durbin Watson	1.73			

Notes: * $p < .05$

The entry of independent variable, which is environmental mastery into the regression model after controlling the moderating variable, predicted as much as 2% of additional variance (*R* squared change = .02) in the dependent variable. Hence, the inclusion of emotional intelligence into hierarchical multiple regression model contribute a very small impact on self-esteem ($R^2 < .15$). The Durbin-Watson value of 1.73 is within the acceptable range of 1.50 ± 2.50, which indicates that the assumption of independence of error terms is not violated.

In addition, the interaction of moderating variable (emotional intelligence) and independent variable (environmental mastery) also showed a significant result [F (3,159) = 5.86, $p < .05$]. Beta value of emotional intelligence was significant with (β =.16, t= 2.03, $p < .05$) and confirms that emotional intelligence is a significant moderator of the relationship between environmental mastery and self-esteem. For the independent variable, environmental mastery is a significant independent variable with a moderate beta (β = .27, t = 3.62, $p < .05$).

Therefore, hierarchical multiple regression model obtained from this study is *Self-esteem = +.16 emotional intelligence +.27 environmental mastery*

Results of this study showed that environmental mastery have a significant impact on hearing-impaired students' self-esteem. Positive beta value indicates that the higher the environmental mastery, the higher the self-esteem of students. In addition, the moderating variable (emotional intelligence) also affect respondents' self-esteem with very small impact and positive value, the higher the emotional intelligence the higher self-esteem. Thus, hypothesis H29 was accepted.

H30: Emotional intelligence moderates the relationship between purpose in life and self-esteem.

Result on the moderating role of emotional intelligence on purpose in life and self-esteem was depicted in table 4.44. In the model summary table, result display an R^2 value of 0.14 which indicates that 14% change in self-esteem variable due to changes in moderator variables and their impact on self-esteem is small ($R^2 < .15$). Based on results' table, there was a significant relationship between the dependent variable and moderator variable at significance level ($p < .05$).

Table 4.44

Hierarchical Multiple Regression Between Purpose in Life and Self-Esteem

	R^2	R^2 Change	*B*	*t*
Step 1 Purpose in life	0.10	0.21	0.29	3.86*
Step 2 Purpose in life Emotional intelligence	0.14	0.041	0.25	3.18*

Table 4.44 *continued*..

	R^2	R^2 Change	*B*	*t*
F	9.10			
df	3,159			
Sig	0.02			
Durbin Watson	1.78			

Notes: * $p < .05$

The entry of independent variable, which is purpose in life into the regression model after controlling the moderating variable, predicted as much as 4.1% of additional variance (*R* squared change = 0.041) in the dependent variable. Hence, the inclusion of emotional intelligence into hierarchical multiple regression model contribute a very small impact on self-esteem ($R^2 < .15$). The Durbin-Watson value of 1.78 is within the acceptable range of 1.50 ± 2.50, which indicates that the assumption of independence of error terms is not violated.

In addition, the interaction of moderating variable (emotional intelligence) and independent variable (purpose in life) also showed a significant result [F (3,159) = $p < .05$]. Beta value of emotional intelligence was significant ($\beta = .25$, $t = 3.18$, $p < .05$) and show that emotional intelligence is a significant moderator of the relationship between purpose in life and self-esteem. For the independent variable, purpose in life is a significant independent variable with a moderate beta ($\beta = .29$, $t = 3.86$, $p < .05$).

Therefore, hierarchical multiple regression model obtained from this study is:

Self-esteem = +.25 emotional intelligence +.29 purpose in life

Results of this study showed that purpose in life have significant impact on hearing-impaired students' self-esteem. Also, the moderating variable (emotional intelligence)

affect respondents' self-esteem with a moderate and positive value, the higher the emotional intelligence the higher self-esteem. In addition, the interaction of emotional intelligence and purpose in life contribute a significant result and moderate impact on self-esteem. Thus, the interaction of emotional intelligence and purpose in life contribute to the significant of model. Thus, hypothesis H30 was accepted.

H31: Emotional intelligence moderates the relationship between personal growth and self-esteem

Detailed result on the moderating role of emotional intelligence on personal growth and self-esteem is shown in table 4.45. In the model summary table, result display an R^2 value of 0.31 indicates that 31% change in self-esteem variable due to changes in moderator variables and their impact on self-esteem is small ($R^2 < .15$). Based on results' table, there was a significant relationship between the dependent variable and moderator variable at significance level ($p < .05$).

Table 4.45

Hierarchical Multiple Regression between Personal Growth and Self-Esteem

	R^2	R^2 Change	*B*	*t*
Step 1 personal growth	0.26	0.07	0.26	3.48*
Step 2 personal growth Emotional intelligence	0.31	0.02	0.17	2.14*
F	5.73			
df	3,159			
Sig	0.001			
Durbin Watson	1.76			

Notes: * $p < .05$

The entry of independent variable, which is personal growth into the regression model after controlling the moderating variable, predicted as much as 2% of additional variance (*R* squared change = .02) in the dependent variable. Hence, the inclusion of emotional intelligence into hierarchical multiple regression model contribute a very small impact on self-esteem ($R^2 < .15$). The Durbin-Watson value of 1.76 is within the acceptable range of 1.50 ± 2.50, which indicates that the assumption of independence of error terms is not violated.

In addition, the interaction of moderating variable (emotional intelligence) and independent variable (personal growth) also showed a significant result [F (3,159) = 5.73, $p < .05$]. Beta value of emotional intelligence was significant (β =.17, t = 2.14, $p < .05$) confirms that emotional intelligence is a significant moderator of the relationship between personal growth and self-esteem. For the independent variable, personal growth is a significant independent variable with a moderate beta (β = .26, t = 3.48, $p < .05$).

Therefore, hierarchical multiple regression model obtained from this study is:

Self-esteem = +.17 emotional intelligence +.26 personal growth

Results of this study showed that personal growth have a significant impact on hearing-impaired students' self-esteem. Positive beta value indicates that the higher the personal growth, the higher the self-esteem of students. In addition, the moderating variable (emotional intelligence) also affect respondents' self-esteem with moderate impact and positive value, the higher the emotional intelligence the higher self-esteem. Thus, hypothesis H31 was accepted.

Main Hypothesis 7:

H32: Cognitive ability, personality traits, psychological well-being and emotional intelligence of hearing-impaired students significantly contributed towards their self-esteem.

Multiple regression analysis was also performed to determine the contribution of cognitive ability, personality traits, psychological well-being, emotional intelligence towards self-esteem. The results in table 4.46 evidences that the regression equation with the predictors is significant, with R= 0.599, R^2= 0.358, R^2 adj= 0.278, F (3, 159) = 4.46, p< .05. It explains that the multiple correlation coefficient between the predictor and the dependent variable is 35.8 percent of the variance in self-esteem. The value of R^2 drops to only 0.08 (about 8%) in the adjusted R^2, which indicates that the cross validity of this model is fine. The significant F-test reveals that the relationship between the dependent variable and the independent variables is linear and the model significantly predicts the dependent variable. The F-test showed that F (18, 144) = 4.46, p< .05 indicates an overall significant prediction in the independent variables to the dependent variables.

Overall, the result presented in table 4.46 exhibited that two predictor dimensions (interpersonal and agreeableness personality) were found to have a statistically significant association with the dependent variable (self-esteem). The agreeableness personality (β= 0.31, t= 3.59, p< .05) had the highest and the most significant standardized beta coefficient, which indicates that agreeableness was the most important dimension in personality and contribute to self-esteem. Other important predictor dimension is interpersonal dimension (β= 0.26, t= 2.63, p< .05).

Therefore, it implies that a better self-esteem can be achieved when the hearing-impaired students have a good interpersonal and agreeableness personality. Based on that, it is concluded that hypothesis H32 was partially accepted.

Table 4.46

Multiple Regression between Cognitive Ability, Personality traits, Psychological Well-Being, Emotional Intelligence and Self-Esteem.

Model	**Un-Std**		**Std**			**Collinearity Statistics**	
	B	**Error**	**Beta**	**t**	**Sig.**	**Tolerance**	**VIF**
(Constant)	0.11	0.81		0.14	0.95		
Autonomy	-0.07	0.10	-0.06	-0.75	0.44	0.69	1.46
Self-Acceptance	0.05	0.07	0.07	0.74	0.44	0.51	1.95
Positive Relations with Others	0.09	0.07	0.11	1.30	0.18	0.57	1.74
Environmental Mastery	0.00	0.07	0.00	0.03	0.98	0.55	1.82
Purpose in Life	0.04	0.06	0.07	0.72	0.47	0.54	1.86
Personal Growth	-0.03	0.07	-0.04	-0.46	0.63	0.56	1.79
Intrapersonal	0.09	0.06	0.15	1.58	0.13	0.47	2.12
Interpersonal	0.13	0.05	0.26	2.63	0.01	0.47	2.13
Adaptability	-0.04	0.05	-0.07	-0.78	0.45	0.56	1.77
Stress Management	0.06	0.05	0.15	1.39	0.18	0.38	2.61
General Mood	0.10	0.08	0.11	1.23	0.21	0.6	1.66
Neuroticism	0.09	0.15	0.05	0.63	0.54	0.87	1.15
Extraversion	0.05	0.11	0.04	0.48	0.65	0.65	1.55
Openness	-0.06	0.09	-0.05	-0.68	0.54	0.77	1.3
Agreeableness	0.21	0.06	0.31	3.59	0	0.58	1.72
Conscientiousness	0.34	0.19	0.13	1.76	0.07	0.83	1.21
Attention	-0.02	0.02	-0.08	-1.08	0.27	0.91	1.1
Memory	0.01	0.02	0.04	0.6	0.51	0.9	1.11
R	.599[a]						
R^2	0.358						
Adjusted *R2*	0.278						
Std Error Estimate	0.27						
F	4.46						
df	3,159						
Sig.	.000[b]						
Durbin-Watson	1.83						

a. Dependent Variable: Self-esteem

4.9 Summary of Hypotheses Testing

Based on the t-test analyses detailed in the previous sections, table 4.47 summarize the results of the hypotheses testing of the differences of cognitive ability, personality traits, psychological well-being, emotional intelligence and self-esteem based on gender and parent's hearing status.

Table 4.47

Hypothesis Testing: Differences of Cognitive Ability, Personality traits, Psychological Well-Being, Emotional Intelligence and Self-Esteem

Hypothesis No.	Hypothesis Statement	Result
H1	There are significant differences of cognitive ability according to gender.	Rejected
H2	There are significant differences of personality traits according to gender.	
H2a	There are significant differences of neuroticism personality according to gender.	Rejected
H2b	There are significant differences of extraversion according to gender.	Rejected
H2c	There are significant differences of openness personality according to gender.	Rejected
H2d	There are significant differences of agreeableness personality according to gender.	Rejected
H2e	There are significant differences of conscientiousness personality according to gender.	Rejected
H3	There are significant differences of hearing impaired psychological well-being of hearing-impaired students according to gender.	Rejected
H4	There are significant differences of emotional intelligence of hearing-impaired students according to gender.	Rejected
H5	There are significant differences of self-esteem of hearing-impaired students according to gender.	Rejected

Table 4.47 *continued*..

Hypothesis No.	Hypothesis Statement	Result
H6	There are significant differences of cognitive ability of hearing-impaired students according to parents' hearing status.	Accepted
H7	There are significant differences of the personality of hearing-impaired students according to parents' hearing status.	
H7a	There are significant differences of the neuroticism personality of hearing-impaired students according to parents' hearing status.	Rejected
H7b	There are significant differences of the extraversion personality of hearing-impaired students according to parents' hearing status.	Rejected
H7c	There are significant differences of the openness personality of hearing-impaired students according to parents' hearing status.	Rejected
H7d	There are significant differences of the agreeableness personality of hearing-impaired students according to parents' hearing status.	Rejected
H7e	There are significant differences of the conscientiousness personality of hearing-impaired students according to parents' hearing status.	Rejected
H8	There are significant differences of psychological well-being of hearing-impaired students according to parents' hearing status.	Rejected
H9	There are significant differences of emotional intelligence of hearing-impaired students according to parents' hearing status.	Rejected
H10	There are significant differences of self-esteem of hearing-impaired students according to parents' hearing status.	Accepted

Table 4.48, summarizes the results of the hypotheses testing of the correlation of cognitive ability, personality traits, psychological well-being, emotional intelligence and self-esteem.

Table 4.48

Hypothesis Testing: Correlation between Cognitive Ability, Personality traits, Psychological Well-Being, Emotional Intelligence And Self-Esteem

Hypothesis No.	Hypothesis Statement	Result
H11	Hearing-impaired cognitive ability is related significantly to self-esteem.	Rejected
H11a	Hearing-impaired memory is related significantly to self-esteem.	Rejected
H11b	Hearing-impaired attention is related significantly to self-esteem.	Rejected
H12	Hearing-impaired neuroticism is significantly related to self-esteem.	Rejected
H13	Hearing-impaired extraversion is significantly related to self-esteem.	Accepted
H14	Hearing-impaired openness is significantly related to self-esteem.	Rejected
H15	Hearing-impaired agreeableness is significantly related to self-esteem.	Accepted
H16	Hearing-impaired conscientiousness is significantly related to self-esteem.	Accepted
H17	Hearing-impaired psychological well-being is significantly related to self-esteem.	Accepted
H17a	Hearing-impaired autonomy is significantly related to self-esteem.	Accepted
H17b	Hearing-impaired self-acceptance is significantly related to self-esteem.	Accepted
H17c	Hearing-impaired positive relations with others is significantly related to self-esteem.	Accepted
H17d	Hearing-impaired environmental mastery is significantly related to self-esteem.	Accepted
H17e	Hearing-impaired purpose in life is significantly related to self-esteem.	Accepted

Table 4.48 *continued..*

Hypothesis No.	Hypothesis Statement	Result
H17f	Hearing-impaired personal growth is significantly related to self-esteem.	Accepted
H18a	Hearing-impaired intrapersonal is significantly related to self-esteem.	Rejected
H18b	Hearing-impaired interpersonal is significantly related to self-esteem.	Accepted
H18c	Hearing-impaired adaptability is significantly related to self-esteem.	Rejected
H18d	Hearing-impaired stress management is significantly related to self-esteem.	Rejected
H18e	Hearing-impaired general mood is significantly related to self-esteem.	Accepted

The summary results on moderating effect of emotional intelligence on cognitive ability, personality traits, psychological well-being, emotional intelligence and self-esteem are illustrated in table 4.49.

Table 4.49

Hypothesis testing: Moderating effect of emotional intelligence on cognitive ability, personality traits, psychological well-being, emotional intelligence and self-esteem

Hypothesis No.	Hypothesis Statement	Result
H19	Emotional intelligence moderates the relationship between memory and self-esteem.	Accepted
H20	Emotional intelligence moderates the relationship between attention and self-esteem.	Accepted

Emotional intelligence moderates the relationship between personality traits and self-esteem.

Table 4.49 *continued*..

Hypothesis No.	Hypothesis Statement	Result
H21	Emotional intelligence moderates the relationship between neuroticism and self-esteem.	Accepted
H22	Emotional intelligence moderates the relationship between extraversion and self-esteem.	Rejected
H23	Emotional intelligence moderates the relationship between openness and self-esteem.	Accepted
H24	Emotional intelligence moderates the relationship between agreeableness and self-esteem.	Rejected
H25	Emotional intelligence moderates the relationship between conscientiousness and self-esteem.	Accepted
Emotional intelligence moderates the relationship between psychological well-being dimensions and self-esteem.		
H26	Emotional intelligence moderates the relationship between autonomy and self-esteem.	Accepted
H27	Emotional intelligence moderates the relationship between self-acceptance and self-esteem.	Rejected
H28	Emotional intelligence moderates the relationship between positive relation with others and self-esteem.	Accepted
H29	Emotional intelligence moderates the relationship between environmental mastery and self-esteem.	Accepted
H30	Emotional intelligence moderates the relationship between purpose in life and self-esteem.	Accepted
H31	Emotional intelligence moderates the relationship between personal growth and self-esteem.	Accepted

Lastly, based on the multiple regression analyses detailed in the previous sections, table 4.50 summarize the results of the hypotheses testing on the contribution of cognitive ability, personality traits, psychological well-being and emotional intelligence of hearing-impaired towards self-esteem.

Table 4.50

Hypothesis on effect

Hypothesis No.	Hypothesis Statement	Result
H32	Cognitive ability, personality traits, psychological well-being and emotional intelligence of hearing-impaired students significantly contributed towards their self-esteem.	Partially accepted

4.10 Summary

This chapter, discusses the data analyses and findings of the study. It begins with an explanation on the response rate of the study, particularly 163 responses that represent 82.3 percent of the overall population. On the demographics, the profile of the respondents is diversified in terms of gender, polytechnic and parents' hearing status.

In the data screening process, the detection and treatment of missing data was conducted, followed by observation of outlier, which confirms that there is no outliers within the data and all the responses are valid to be used for further analysis. In addition, tests of normality, linearity, multicollinearity were also undertaken and the results also indicated that the data are normally distributed. In order to verify the reliability of the instrument, an internal consistency procedure was implement. Meanwhile, to assess the relevancy of the instrument and representative of the targeted construct, a content validity was performed. A descriptive analysis and inferential analysis on the major variables were also conducted towards explaining the dataset.

Finally, the hypotheses of the study were tested using t-test, Pearson correlation, multiple regression and hierarchical regression analyses in order to determine the differences in mean, the relationship between dependent variables and independent variables and the effect of the moderating variable. The results of the hypotheses testing indicate that 25 out of 52 sub-hypotheses are accepted while 27 sub-hypotheses are rejected. In the following chapter, these findings are discussed in more detail.

CHAPTER FIVE

DISCUSSION, RECOMMENDATION AND CONCLUSION

5.1 Introduction

This chapter encapsulated and deliberated the research findings based on the research objectives and hypotheses. The implications and recommendations from the theoretical and practical perspective were also expanded. This chapter also incorporates the limitation and future research direction and ended with a conclusion of the study.

5.2 Discussion of Findings

5.2.1 Cognitive Ability Dimensions, Personality Traits, Psychological Well-being Dimensions, Emotional Intelligence Dimensions and Self-Esteem of Hearing-Impaired Students

The first objective of the study was to investigate the level of hearing-impaired cognitive ability dimensions, personality traits, psychological well-being dimensions, emotional intelligence dimensions and self-esteem. Descriptive statistical analysis was performed to answer the first research question that directly fulfilled the first research objective. Personality traits and emotional intelligence were based on five-point likert formatted scale, psychological well-being was based on the six-point likert formatted scale while self-esteem, used four-point likert formatted scale respectively. Whereas, the cognitive ability variable had used the formatted scale that was calculated based on CANTAB software.

The existence of these variables were proven when the findings of the study had found the mean and standard deviation scores for attention are at higher score, followed by cognitive ability, memory, psychological well-being, autonomy, self-acceptance, positive relations with others, environmental mastery, purpose in life, personal growth, emotional intelligence, intrapersonal, interpersonal, adaptability, stress management, general mood, neuroticism, extraversion, openness, agreeableness and conscientiousness which were at moderate scores. However, for self-esteem, the scores were at low level.

The score for attention dimension was at a higher level which had been confirmed based on the responsiveness of these dimensions in hearing-impaired and cognitive ability students in the learning process. Moreover, this may be due to hearing-impaired students in polytechnics that have been adapted to some sign languages in their learning process and communication. Relatedly, the communication of hearing-impaired learner is correlated with sign language and attention as describe by Marschark et al. (2017).

The use of the sign languages of hearing-impaired students and lecturers during the learning process may assist the students to focus and stay attentive to the subject that they are learning. These was supported by Dye and Hauser (2014) finding that hearing-impaired students who used sign languages since they were children did not suffer from lower attention. However, Oliva, Lytle, Hopper and Ostrove (2016) did not support the significant of sign language for hearing-impaired and the interactions with their peers.

The level of memory dimension and cognitive ability of hearing-impaired students are reported at the moderate level. This finding contrasted with Marschark, Thomastine and Trani (2016) that has reported hearing-impaired individuals to achieve lower score for memory tasks. The moderate level of hearing-impaired memory and cognitive ability are also related to the use of sign language in their learning process at polytechnics. As research demonstrated by Parasnis (1998) sign language is a language, and its role in communication and education by memorizing the written information in a sign code is essential. Hallgren et al. (2001) found that normal hearing people achieved a better attention level than hearing-impaired people. However, studies done by Adam (2003); Ali (2007) and; Lokman (2007) show that the cognitive ability level of hearing-impaired and normal hearing population were equivalent.

The moderate score of hearing-impaired emotional intelligence implicated the use of sign language and conversation with family and in the classroom. Sign language is part of hearing-impaired culture specifically the Malaysian Sign Language (MySL) within Malaysia. The use of sign language of hearing-impaired students in some way have enabled them to communicate with their family and hearing peers. But, normal hearing individuals may have difficulties in recognising the emotions of hearing-impaired students and discussing these with them. Thus, this situation defected the competency of their intrapersonal, and elements of psychological well-being.

In addition, further analyses were made on psychological well-being and its dimensions (autonomy, self-acceptance, positive relations with others, environmental mastery, purpose in life, personal growth) where the mean scores were detected at a

moderate score. The findings of this study seem to differ from the study of Barak and Sadovsky (2008) and Dammeyer (2010), which found a lower level of well-being in hearing-impaired students.

A possible explanation for the moderate levels of psychological well-being of students found in this study might be that some of the hearing-impaired students feel discriminated because of their impairment. The findings of this study propose that social identity theory processes may be suitable in understanding psychological well-being among hearing-impaired students. In the social identity concept, well-being is related to group status and accomplish through separation from a threatened (discriminated against) identity and passing to a higher-status group. This study found that although there is a feeling of being discriminated, their psychological well-being was at the moderate level. This study has been supported by Glickman (1996) and Ladd (2003) who found that cultural minority (hearing-impaired) movement has been protested against discrimination by the hearing majority culture.

Meanwhile, the mean score of overall personality traits which were neuroticism, extraversion, openness, agreeableness and conscientiousness, were also at moderate scores. According to the Five-factor model (FFM), the five factors comprise levels of the personality traits hierarchy such as extraversion, agreeableness, conscientiousness, neuroticism and openness (McCrae & Costa, 1997). This model of personality was applied to this present study by utilising the NEO-FFI questionnaire based on Costa and McCrae (1992) Five factor model (FFM) concept.

An individual with high neuroticism personality encompasses an anxiety, moodiness and frequently experience insecurity. In this current study, hearing-impaired students score a moderate score of neuroticism which show their level of emotional reactivity is typical of the general population. In this view, hearing-impaired students in polytechnics are generally able to manage their stressful and frustrating feelings. Joseph and Newman (2010) believe that individual with a low level of neuroticism is able to regulate their emotion effectively.

The moderate score of extraversion indicates hearing-impaired students neither a passive loner nor a cheerful person. They were enjoying time with their friends but also have time to be alone. Aitao Lu et al. (2014) claim the peer attachment of hearing-impaired was influenced by the level of extraversion of each individual. Meanwhile, the moderate score of openness indicate hearing-impaired enjoy their routine task but they are also willing to try new things. An effective learning activity during class such as games will increase hearing-impaired creativity and flourish their imagination. Thus, contributing to better openness personality.

The present study revealed that hearing-impaired students achieve a moderate score of agreeableness. This moderate score indicates some concern of hearing-impaired with others' needs, but, they are generally unwilling to sacrifice themselves for others. Hearing-impaired with high agreeableness have a strong interest in other's needs and well-being. To sustain high agreeableness, they have to respect others, accept people as they are and concerned about others. Polytechnics administration were also advice to plan a team building program which narrow down on agreeableness element that

may heighten the pleasant and cooperative character of hearing-impaired students. This study also found that conscientiousness of hearing-impaired was at the moderate level which represents hearing-impaired characteristics such as reasonable reliable, organised, and self-controlled. A combination of elements such as motivation, emotional stability and adaptive thinking may lead to better self-conscientiousness of hearing-impaired students.

In this study, it seems possible that these findings were due to various aspects such as the quality of communication of hearing-impaired with their parents/ caregivers in the earliest development period and the language and communication barriers which are a forceful factor in the development of hearing-impaired personality. On the basis of these findings, it is assumed that hearing-impaired students have language barriers, therefore, the understanding of social situations can be worse amongst such students, who acquire social experience at a slower rate and frequently respond inappropriately to social situations.

Communication barriers occur in polytechnics cause by lack of sign language skills among normal hearing peers and staff at polytechnics. There are cases where individual lack of understanding on the part of the hearing-impaired engages in conversation with, (Jacks, Marsh & Massey, 2000; Antia & Kreimeyer, 2003; Calderon & Greenberg, 2003). These factors may lead to a less expressed personality trait of agreeableness in hearing-impaired students, characterised by antagonism and a strong will. The obstacle in communication also contributes to a feeling of insecurity, moodiness and shyness which lead to neurotic personality. Moreover, the reason for

communication barriers also signifies less expression of extraversion, openness and conscientiousness.

On the other hand, the mean score for self-esteem demonstrated low mean score. This finding showed that their social environment and self-acceptance was poor. Hearing-impaired students who receive less acceptance from a normal hearing community show a low score of emotion (Kogovsek, 2007). The present study seemed to be consistent with Jordan (2011) and Theunissen et al. (2014) studies. They had found hearing-impaired students experiencing low level of self-esteem when they have no close friends and seems to avoid outdoor activities and social contacts. Batten, Oakes and Alexander (2013) had suggested that good relationships may support the development of emotions, overall well-being, cognitive ability and self-confidence of hearing-impaired students.

Based on self-esteem theory, self-esteem is a type of character, based on the concept of a feeling, a feeling of one's worth or worthiness or value as a person. In this present study, hearing-impaired students at polytechnics expressed less feeling of worthiness due to stigmatisation by the certain normal hearing group of individuals. This effect was caused by the tendency of hearing-impaired to internalise the negative attitudes held by the group towards them. Therefore, this leads to lower self-esteem among hearing-impaired students at polytechnics.

These findings further support the ideas of Lane (1992), that found a lower level of self-esteem among hearing impaired people have because they are being affected by

the discrimination of normal hearing people and they are in a less valuable minority group. In Jambor and Elliott (2005) study regarding self-esteem and coping strategies among hearing-impaired students, it was found that members of the minority groups have lower level of self-esteem. According to Hughes and Demo (1989), self-esteem is in part a consequence of individuals comparing themselves with others and making positive or negative self-evaluations.

A possible explanation for the low level of hearing-impaired self-esteem may be due to "social comparisons" perspective of self-esteem theory. Concerning the perspective, hearing-impaired have compared themselves with the normal hearing students and they are making self-evaluation. They have defined themselves as a disable student and presents the minority group which represent less than 1% of the total numbers of polytechnics students.

5.2.2 Differences According to Gender and Parents' Hearing Status.

These findings were presented to fulfil the second research objective of the study. The study had found that there were no differences of cognitive ability, personality trait, psychological well-being, emotional intelligence and self-esteem between male and female hearing-impaired students; thus, hypotheses H1, H2 (H2a, H2b, H2c, H2d, H2e), H3, H4 and H5 were rejected.

The study also revealed that personality trait, psychological well-being and emotional intelligence did not differ according to parents' hearing status. Therefore, hypotheses H7, H8 and H9 were rejected. However, findings of the study had found the differences

between hearing-impaired cognitive ability and self-esteem according to parents' hearing status. Accordingly, hypotheses H6 and H10 were accepted.

Firstly, findings from the study had discovered that hearing-impaired cognitive ability differed according to parents' hearing status. Finding revealed hearing-impaired students with hearing-impaired parent achieve a high mean score compare to hearing-impaired with normal hearing parent. Consistent with previous research, hearing-impaired students with hearing-impaired parents reported slightly higher cognitive ability than normal hearing parents (Tayrose, 2011).

In this study, it could be assumed that cognitive ability was heightened by communication style of hearing-impaired parents such as by using sign languages, hand and body movements which involved visual movements and memory codings. According to Marschark et al. (2002), sign languages contributed to the cognitive development and visual imagery. The study of Dye and Hauser (2014) show a distinct finding, that there is no significant finding that hearing-impaired born to hearing-impaired parent have a better score in attention ability than hearing-impaired with a normal hearing parent.

Bat-Chava (2000) has emphasised that hearing-impaired parents used the sign language to communicate with their children. Ge Chen (2014) concluded that every hearing-impaired people mode of communication mainly includes sign language and oral language. The finding of the study was supported by the "Deaf identity development" perspective which is the mode of communication. Hearing-impaired students of hearing-impaired parents grew up with sign language mode. They

experience being hearing-impaired with their hearing-impaired parents. In early stage of life, they were expose on how to memorize and focus on what they have learnt through sign language. Thus, it may increase hearing-impaired cognitive ability.

Meanwhile, this present study had also discovered that self-esteem level differed between normal hearing parents and hearing-impaired parents. Hearing-impaired students with hearing-impaired parents had shown a high level of self-esteem rather than students with normal hearing parents.

This was supported by Bat-Chava (2000) and Kogovsek (2015) where students of hearing-impaired parents were found to have a higher level of self-esteem than students of hearing parent. Hearing-impaired parents began communicating with their hearing-impaired children in sign languages rather than normal hearing parents who struggled with communication issues. In this study, the high-level of self-esteem among hearing-impaired students was due to communication and social supports they received from their hearing-impaired parents. As reported by Desselle (1994), the self-esteem level was influenced by a positive relationship between the families who practice sign language.

This study was in line with Rosenberg self-esteem theory concept which emphasises that other people assessment of an individual are influenced by a human communication. Hearing-impaired students who have hearing-impaired parents show a higher mean of self-esteem rather than hearing-impaired with normal hearing parents. Students with hearing-impaired parents communicate well with their parents through the same medium of communication which is sign language. This situation

might support students in strengthening their family bonding, thus the good relationships will enhance their self-worth and increase their level of self-esteem. According to Jambor and Elliot (2005), the self-esteem of hearing-impaired people is related to the element of communication at home.

Furthermore, students with hearing-impaired parents accept the hearing impairment as a normal and destined phenomenon rather than disability. Therefore, parents with hearing impairment focus on how to assist their child rather than focusing on the problem of hearing impairment. Hearing-impaired parents were familiar with community resources and educational for hearing-impaired, aware with hearing-impaired experience and had the social network of supports, thus, the way they guide, educate and communicate with their children will have effects on the development of their children.

This was in line with Crowe (2003) that showed hearing-impaired parents, social and cultural support which exposed to hearing-impaired since children achieve a high level of self-esteem. This finding was also supported by Kogovsek (2015) where his research on hearing-impaired students who had hearing-impaired parents found parents as the role models to dealing with culture, social, family values and language accessibility. There may indeed be a difference among hearing-impaired with parents who are normal hearing and parents who are hearing-impaired.

5.2.3 Association between Self-Esteem, Personality Traits, Cognitive Ability Dimension, Psychological Well-Being Dimension and Emotional Intelligence Dimensions of Hearing-Impaired Students.

These findings were intended to answer the third research questions of this present study. Overall, the study had proven that hypotheses (H13, H15, H16, H17, H17a, h17b, H17c, H17d, H17e, H17f, H18, H18b, H18e) were accepted. However, hypotheses H14, H18a, H18c and H18d were rejected. The findings encountered the present relationships between variable of the study that varied from strong to weak relationships.

Hearing-impaired extraversion personality, agreeableness personality and conscientiousness personality had significance positive correlations with self-esteem. The psychological well-being, autonomy, self-acceptance, positive relation, environmental mastery, purpose in life and personal growth were also positively correlated with self-esteem. Apart from that, the emotional intelligence and interpersonal had showed a significant positive correlation with self-esteem. Lastly, hearing-impaired general mood was found to have a significant positive connection with self-esteem.

The findings for objective three explained that hearing-impaired extraversion personality, agreeableness personality and conscientiousness personality were positively correlated with self-esteem. The findings had been proven in the previous studies on positive correlation between extraversion personality and self-esteem (Siti Sarawati et al., 2012; Fulmer et al., 2010). In the meantime, Judge et al. (2002) and

Robins et al. (2001) had suggested that extraversion personality was strongly related to self-esteem.

On the basis of these findings, the ground for positive correlation between extroversion personality and self-esteem was mainly due to the hearing-impaired condition in education setting. At polytechnics, they frequently interact with others and express their idea during class. Hearing-impaired students involved with the learning session in class, experience and facilitate the positive emotions. Moreover, during their daily life such as buying food, shopping and managing their activities as polytechnic students, they have to communicate with normal hearing people. Thus, it enhances their assertiveness, sociability, positive emotions and self-confidence.

According to Zhao and Seibert (2006), the extroverts by nature, liked to participate in any activities actively. The self-confidence flourished the self-esteem level (Carrington & Whitten, 2005). According to Costa and McCrae (1992), element such as activity, assertiveness and confidence are facet of extraversion personality. As this study explores, self-esteem of hearing-impaired students were influence by an activity of hearing-impaired in class, communication during learning process and activity with peers and lecturers thus develop their self-confidence.

The opposite of extroverts hearing-impaired students are introverts who demonstrate the opposite characteristics, such as shyness, passivity, low self-confidence, silent and inhibited. Hence, hearing-impaired with high-levels of extraversion may interact constantly with their friends and lecturers. According to Riggio (1986), extraverts are

highly social and they often have many friends and connections through which they learn how to master cultural differences. Therefore, the finding extends the knowledge of the concept of extraversion personality as indicated in Big Five Personality Theory.

Along with positive correlation between extraversion personality and self-esteem, the findings have also revealed positive correlation between agreeableness personality and self-esteem. This present study had also revealed similar findings to Pullmann and Allik (2000) that agreeableness personality had positive correlation with self-esteem. According to Zeidner, Matthews and Roberts (2009), agreeableness was a component of empathy, friendly and aware about the feelings of others.

In this study, the positive correlation of hearing-impaired agreeableness and self-esteem may be due to the facts that hearing-impaired students in polytechnics have benefitted from their empathy towards peers. The empathy emerges due to their same perception and situation as a group of disable students in polytechnics. Like normal hearing students, hearing-impaired students also believe that it is also important to have a warm, empathy and caring peers. High agreeableness facilitates tolerance and cooperation among hearing-impaired students in polytechnics which therefore established their self-acceptance and self-esteem. Based on Peterson's (2015) study, feelings of empathy for others' unhappiness can motivate empathetic communication as well as practical efforts to decrease the distress. Empathy can extend abstractly to generous acts to humanity through the sacrifice of personal well-being in the service of the prevention of future human suffering.

The research has also shown that conscientiousness is positively correlated with hearing-impaired self-esteem. The finding of the current study is consistent with Randal, Pratt, and Bucci (2015) who discovered that self-esteem shows a significant positive correlation with mindfulness (conscientiousness). A possible explanation for this might be that the polytechnics educational system has emphasizes self-discipline, organization and systematic education during their learning process.

Hearing-impaired students at polytechnics learn the technical programs on special skills which are structured by systematic process and relevant to hearing-impaired students. Apart from that, all programs offered in polytechnic have been certified by MQA (Malaysian Qualification Agency) and supervised by ISO-9001:2008 which validate the quality standard of education. Thus, the hearing-impaired students and lecturers in polytechnics are abide by the systematic guidelines that are provided by the polytechnic educational system. Consequently, the system will embolden the hearing-impaired self-discipline as well as motivation and competence that can also create their worthiness to enhance their conscientiousness and self-esteem level.

This research findings support the Big Five Theory of personality by Costa and McCrae (1992a). According to this theory, agreeableness personality indicates the responsibility and concerned of an individual toward others and conscientiousness which assign as an ability to manage emotions, thoughts and behaviour.

This study also sets out to determine the correlation between psychological well-being (autonomy, self-acceptance, positive relation with others, environmental mastery,

purpose in life and personal growth) and self-esteem. The present study had discovered the positive correlation between psychological well-being and self-esteem. These findings had further supported the idea of Meyer and Kashubeck-West (2011) and Arkoff et al. (2006) that demonstrated the psychological well-being in hearing-impaired people, was related positively to self-esteem. Result also supported Zaidman-Zait (2017) study which hearing-impaired relationships with peers and family correlated positively with self-esteem and health related quality of life.

This present study confirms that psychological well-being is associated with self-esteem. The findings can be explained by the fact that there are influenced on the student's college lifestyle in polytechnics based on sharing the same facilities and services. At polytechnics, hearing-impaired students were placed in the same room and class with their hearing-impaired peers. Hearing-impaired students shared the same perception, situation and support through their peers. Thus, attending positive perception and generating positive thoughts will maintain hearing-impaired well-being and self-worthy, even when they experienced negative events. Well-being and self-esteem were affected by the situation of peers, neighbours, co-workers and spouses and it might be expressed as positive affect and positive self-esteem as well. (Matthews, Zeidner, & Roberts, 2004).

Ryff (1989a, 1989b) defined autonomy as a self-determination to resist peer pressure and the ability to control one's behaviour. Autonomous individuals had self-directed standards of measurement and did not conform blindly to social standards and pressure. In contrast, Zand and Pierce (2011), stated that autonomy had not always

been a characteristic associated with people with hearing-impairment, in that they did not direct their existence and control their quality of life throughout history.

However, autonomy in the hearing-impaired community came from struggling the grips of oppression and control (Humphries, 1996). In this present study, the hearing-impaired students at polytechnics created their own autonomy. They interacted with their classmates and lecturers by using sign languages, thus reducing the communication barriers among hearing-impaired students and lecturers. This situation had some important implications for the development of autonomy and self-esteem (Marschark, 2007).

In this study, the self-acceptance and positive relation with others had revealed a positive correlation with self-esteem. Self-acceptance was the ability to integrate positive and negative personal events into one's self-concept. Self-acceptance comprised of habits, characteristics, values, self-approval (accepting of one's traits) and decisions. (Ryff, 1989a). Meanwhile, hearing-impaired students who achieved high positive relation with others will present a warm, trust, empathy, affection, and understanding characteristics toward others.

The possible relationships between self-acceptance, positive relations with other and self-esteem of hearing-impaired students benefitted from the acceptance parents of hearing impairment and hearing-impaired peers, hearing peers and lecturers at polytechnics. In polytechnics, hearing-impaired students' class are congregated (a hearing-impaired program in a public school). They utilise the same facilities and

services with normal hearing students in polytechnics. Thus, there have interaction, acceptance and positive relationships between normal hearing students and hearing-impaired students.

This finding corroborates the ideas of Keilmann et al. (2007), who revealed that students from congregated program achieve a high score in self-acceptance than students from the segregated program. Moreover, Leigh (2009) stated that the relationships with both hearing-impaired and normal hearing people could improve the well-being and self-esteem level of the hearing-impaired individual. Young hearing-impaired adolescents who require supports from parents to gain self-acceptance but rejected may lead them to feel shame, guilt, and face difficulties with future relationships (Sevigny-Skyer, 1990). The development of self-acceptance of hearing-impaired students promotes to the effectiveness of peer interaction strategies that influenced the hearing-impaired social skills (Antia, 1994).

In this study, the finding is in line with Leigh and Stinson (1991) study which has shown positive relationships with others that are influenced by experiences which vital to each individual. Individuals who are hearing-impaired, are at risk for low self-esteem and may feel as though they have less control over the environment than hearing peers, which in a way may affect the development of important relationships. Leigh and Stinson (1991) also examined the social and emotional benefits of residential versus mainstream placements. Students in residential placements have been reported to have better social satisfaction and may increase the opportunity to create positive relationships.

The findings for objective three had revealed that hearing-impaired environmental mastery, purpose in life and personal growth were positively correlated to self-esteem. The finding supports the previous study on positive relationship and impact of environmental mastery, purpose in life, personal growth and self-esteem (Mruk, 2006). The environmental mastery was also known as an ability to manage and direct the external environment in an effort to maintain health and well-being (Ryff & Singer, 2001). Thus, one who functions positively has goals, intentions, and a sense of direction and will contribute to the feeling that shows life is meaningful.

Based on these findings, the fact that hearing-impaired student's environmental mastery, the purpose in life and personal growth are correlated positively to self-esteem was due to life adjustment in the polytechnics. The process whereby hearing-impaired interact with the polytechnics environment to meet social, psychological and physical needs and achieve a pleasant emotion contribute to their maturity of thought and feelings. The life adjustment in polytechnics may influence hearing-impaired such as being productive, creative and able to manage their problems in life by themselves. Thus, it brings the maturity in their thoughts and feelings.

The findings also enhance our understanding of life span developmental theory. In this theory, the maturity of oneself is seen to require participation in a significant sphere of activity outside of self. The theory of life span development also refers to an individual who is productive and inventive in changing purpose in life (Ryff, 1989). A hearing-impaired student who functions positively has a goal in life, has aims and objectives for the living, all of which contribute to the feeling worth or value as a person. Thus,

hearing-impaired students who manage to accomplish a good environmental mastery, purpose in life and personal growth will embolden their self-esteem.

In particular, overall emotional intelligence and emotional intelligence dimensions, namely interpersonal and general mood, were significantly correlated with hearing-impaired self-esteem. The findings indicated that their ability to understand and regulate emotions to resist situational threats, social responsibility, relationship with others, optimism and happiness thoughts were significantly related to their self-esteem. This discovery supported previous studies that emotional intelligence was associated with self-esteem (Kong, Zhao, & You, 2012; Schutte et al., 2002; Ciarrochi, Chan, & Caputi, 2000).

A possible explanation for these present finding has shown that hearing-impaired students who participate in co-curriculum activities such as club, sports, outdoor and indoor activities may influence the self-esteem and emotional intelligence element. These activities strengthen the hearing-impaired students' relationships with their peers and lecturers. Moreover, sports activities also involve normal hearing peers at the polytechnics. These activities increase the interpersonal relationships and enhance their self-satisfaction. According to Harvey (2008), integration between normal and disability students will not only personally benefit the hearing-impaired but normal students will also benefit from human diversity and tolerance in learning.

Bar-On concept of mixed models encompassed of a variety behavioural component which are considered to be a crucial factor of emotional intelligence. Maintain a good

relationship with others in polytechnics may heighten the emotional intelligence level. The tendencies factors such as self-esteem, assertiveness and motivation were highlighted by Mayer et al. (2008) as a combination factors of mixed emotional intelligence concept. Therefore, to enhance self-esteem, the interpersonal and general mood aspects are vital. Having close positive peer relationships is associated with the high level of self-esteem (Bishop & Inderbitzen, 1995). According to Mayer et al. (2008) a person with happiness mood, demonstrate a signal of wanting to join with others.

5.2.4 Moderating Effects of Emotional Intelligence on The Relationship between Cognitive Ability Dimensions, Personality Traits, Psychological Well-Being Dimensions and Self-Esteem of Hearing-Impaired Students.

In this section, the researcher deliberates discussion focusing on the fourth objective of this present study. Objective four aims at analysing the moderating effects of emotional intelligence on the relationship between self-esteem, cognitive ability dimensions, personality traits and psychological well-being dimensions.

The findings of these present study have revealed emotional intelligence as moderating the relationships between cognitive ability dimensions, personality trait and psychological well-being dimensions. The significance of the hierarchical regression analyses between cognitive ability dimensions, personality traits and psychological well-being dimensions and emotional intelligence as moderating variable has supported hypotheses H19, H20, H21, H23, H25, H26, H28, H29, H30, and H31.

This present study shows that emotional intelligence of hearing-impaired students as a moderator between overall cognitive ability and cognitive ability dimensions (memory and attention). The contribution of this study has confirmed Matthews, Zeidner and Roberts (2002) findings that emotional intelligence has an effect on cognitive ability. This present study was also supported by Guttman (1992) who claimed that emotional intelligence was correlated positively to all dimensions of cognitive ability. This present study is also being supported by Mayer et al. (2008) ability model which highlighted on individual's mental abilities. The model conceptualised that cognitive ability, personality and behavioural traits are the elements of emotional intelligence.

The present study shown that emotional intelligence has a small impact on hearing-impact cognitive ability. Findings was reliable with the conceptualization of mixed models of emotional intelligence which measure a combination of intellect, personality, motivation, and affect. The study done by Joseph and Newman (2010) was also consistent with this conceptualization, which found a weak relationship between mixed emotional intelligence and cognitive ability.

In this present study, hearing-impaired emotions and mood in class contribute to their memory and attention in the learning process. There are several possible explanations for these findings. According to Cattell-Horn-Carroll (CHC) theory by Horn and Noll (1997), elements of environmental influence and education predicted the cognitive ability of an individual. Environmental influences such as parental supports and interaction with people near contribute to the emotional stability of hearing-impaired

students. Students who received strong supports from parents and people around them lead to happiness and self-confidence. Therefore, this may boost their memory ability and attention ability. Hearing-impaired students with stability in emotion factor are less disturbed during the learning process and this factor may contribute to the process of enhancing their cognitive ability than those who are not emotionally stable.

In this study, researcher consistently found that emotional intelligence moderated the relationships for three personality factors (neuroticism, openness and conscientiousness) with self-esteem. Emotional intelligence was found to moderate the negative relationship between neuroticism and self-esteem. Results appear to support that emotional intelligence as negatively correlated to neuroticism (Afolabi, 2013). The neuroticism contains the feeling of anxiousness, nervousness, sadness and stressfulness. Hearing-impaired students at polytechnics are believed to have a stable emotional personality and can function perfectly with their hearing-impaired peers and lecturers.

The emotional intelligence moderates the relationships between openness personality and conscientiousness personality with self-esteem. The findings were similar to Brackett and Mayer (2003) which revealed that emotional intelligence positively correlated with openness personality but negatively correlated with neuroticism. Moreover, Petrides and Furnham (2000) found that emotional intelligence was positively correlated with conscientiousness personality but negatively correlated with neuroticism personality. Zeidner, Matthews and Roberts (2009) findings exposed that

emotional intelligence was correlated with agreeableness and conscientiousness personality, but not in neuroticism personality.

Examining the hearing-impaired emotional intelligence utilising the mixed-based measure of emotional intelligence, the EQ-i (Bar-On, 1997), several EQ-i items deal directly with some personality traits. Therefore, this is the reason why mixed emotional intelligence affect the relationship of openness and conscientiousness personality traits. The study of Daus and Ashkanasy (2005) points out that mixed emotional intelligence shows significant overlap with Big Five personality traits.

The relatedness of emotional intelligence, openness personality, conscientiousness personality with self-esteem, is mainly due to the use of sign language as a medium of communication. Hearing-impaired students in polytechnics express their emotions and exchange information by utilising the visual method. The sign languages commonly used by many hearing-impaired people involved the body and hand gestures as well as facial expression.

The body and hand gestures become the most natural mean among hearing-impaired people in communicating. The non-verbal communication is important for hearing impaired people and exist in various methods such as facial expressions, lip motions and handwritings (Vutinuntakasame, Jaijongrak, & Thiemjarus, 2011). The study done by Knyazev et al. (2008) revealed that individual who perceives facial expressions is influenced by their personalities.

The findings of these study also approve emotional intelligence as a moderating variable between autonomy, positive relation with others, environmental mastery, purpose in life, personal growth and self-esteem of hearing-impaired students. This study has been supported by Nelson (2005) where the personal well-being of individuals is related to emotional intelligence skills. The relatedness of emotional intelligence, autonomy, positive relation with others, environmental mastery, purpose in life and personal growth towards hearing-impaired self-esteem, is mainly due to the social interaction and positive mood of hearing-impaired students in polytechnics.

The positive social interactions are the interactions in which the individual is being understandable and appreciated by others. The satisfaction needs for autonomy and competency are the strongest factors of supporting social interactions (Ryff & Singer, 2001). In polytechnics, hearing-impaired students have a social interaction with their peers, lecturers, polytechnics students and community around them in polytechnics. The social interactions arise during their interactions and communications with the people around their residential colleges, classes and outside the polytechnics itself.

These positive social interactions embellish hearing-impaired self-worth which thus, enhance their psychological well-being and self-esteem. Positive social interactions will lead to positive emotions, which its function is to signify social connection. Individuals who are involved in positive social interactions are securely attached and they will experience some degree of satisfaction in autonomy (Reis et al., 2010). Ryff and Singer (2001) declared that individual daily social interactions are influenced by

self-esteems and they suggest a study on how daily relational antecedent will influence emotional well-being via indirect impact on self-esteem.

Moreover, the positive mood may influence the emotional intelligence and psychological well-being (autonomy, positive relation with others, environmental mastery, purpose in life and personal growth) of hearing-impaired students in polytechnics. The positive mood of hearing-impaired students will affect their relationships with their friends and lecturers. The present study was similar to Schutte et al. (2002) study which revealed that emotional intelligence was positively correlated with self-esteem and positive mood. In addition, the practice of positive emotions may enrich the individual well-beings (Sharma, 2011).

Overall, the present study had revealed that the relationship between cognitive ability, neuroticism personality, openness personality, conscientiousness personality, self-acceptance, autonomy, purpose in life, environmental mastery and personal growth with self-esteem were moderated by emotional intelligence. Fernandez-Berrocal and Checa (2016) found that cognitive ability and general intelligence relationship is well-established, and proof a connection between cognitive ability, emotional intelligence and personality. Together, this present study evidenced that the higher emotional intelligence, the higher cognitive ability, neuroticism personality, openness personality, conscientiousness personality, self-acceptance, autonomy, purpose in life, environmental mastery and personal growth. Emotional intelligence was also considered as a relevant and valuable variable for understanding and enlightening various human processes.

5.2.5 Factors of Cognitive Ability, Personality Traits, Psychological Well-Being and Emotional Intelligence That Contribute to The Self-Esteem of Hearing-Impaired Students.

In this present study, the fifth objective was to determine the variables that contributed to hearing-impaired self-esteems. This present study had shown certain dimensions of personality traits and emotional intelligence that partially contributed to hearing-impaired self-esteem. In this regard, interpersonal and agreeableness personality were found as factors that contributed to hearing-impaired self-esteem. These results were consistence with Yilmaz, Hamarta, Arslan, and Deniz (2013) that revealed interpersonal dimension as positively correlated with self-esteem. The elements of interpersonal were empathy, social responsibility, and relationship with others (Bar-On, 1997).

There is a possible explanation for this finding on hearing-impaired relationships with others. Supports from peers in giving praises as well as to work cooperatively with classmates and peers are the necessity of relationships with others. This interpersonal relationship may affect the hearing-impaired self-esteem as accordance to self-esteem theory which emphasises the concept of value as a person. A desire for worthiness feelings essential to hearing-impaired students in order to enhance their quality of relationships with peers, jointly and mutually with others in a relationships or group. This is supported by Wagner (2009) and; Harter, Waters, and Whitesell (1998) studies that discover interpersonal relationships with classmates, teachers and parents correlated significantly with self-worth. These findings have further supported the idea

of Basu and Mermillod (2011) which indicate the relevance of interpersonal skills towards self-esteem. They also claim that interpersonal skills will depend upon self-esteem, social awareness, empathy, and stress management. In this study, the vulnerability effect of low self-esteem might engage through interpersonal skills. Studies done by Joiner, Alfano and Metal-sky (1992) and; Potthoff, Holahan, and Joiner (1995) discover that the person who achieves a low level of self-esteem might extremely follow an encouragement and support from friends and partners in relationships.

The present study also found that agreeableness personality contributed towards high self-esteem. These findings were consistence with Marshall, Lefringhausen and Ferenczi (2015) who found that agreeableness personality was significantly correlated to self-esteem. Hearing-impaired students with a stable agreeableness personality had shown helpful characteristics, cooperative, and having good relationships with other people.

According to Identity Theory, to occupy in social structure and reflect in various social, the multiplicity of self-identity are essential. As such, the understanding and feelings towards other people need to apply to the 'self' as an occupant of a social interaction. Therefore, the characteristics such as trust, concern and friendliness of agreeableness personality and interpersonal relationships not only accomplish the hearing-impaired role behaviour that maintains social interaction but may also enhance and enlighten their self-esteem.

5.3 Implications

In the previous section of the chapter, the research objectives and hypotheses have been discussed thoroughly. In this section, the theoretical and practical implications are discussed.

Findings from the present study have extended the literature review and thus have contributed to the body of knowledge in hearing-impaired research. Findings of this study contribute to the empirical research on the cognitive ability of students with parents' hearing status. From the research findings, it can be assumed that cognitive ability is influenced by environmental influence such as style of communication.

Hearing-impaired students with hearing-impaired parents are exposed to hearing-impaired community, lifestyle and culture since they are born. These factors linked to the communication style of their parents and family. Moreover, students with hearing-impaired parents are being accepted and receive moral supports by their parents, family and hearing-impaired community. The supportive environment will contribute to the learning process, practice and use and strengthen the hearing-impaired cognitive ability.

By having the high supportive environment that suits their needs, hearing-impaired may develop their own competencies and capabilities to boost their memory and attention. In another word, this study believes that the environmental influence help hearing-impaired to obtain a high cognitive ability level. The findings proved that cognitive ability of hearing-impaired students is influenced by the supportive

environment such as communication style, moral support and acceptance by parents. Considerably, the Cattell-Horn-Carroll (CHC) theory by Horn and Noll (1997) confirm this research finding which proof that cognitive ability relates to environmental influence such as parental supports and education methods.

In addition, the current study found that the intrapersonal and agreeableness personality were found to have a statistically significant association with the dependent variable (self-esteem). The finding supports emotional intelligence mixed model and five-factor model. The emotional intelligence mixed model on emotional intelligence and five-factor model on personality traits suggest that hearing-impaired students should improve their interpersonal skills and sustain the agreeableness personality. Hence, the agreement established in this study was intrapersonal and agreeableness affects hearing-impaired self-esteem. In other words, this study revealed that the hearing-impaired ability to acquire the high level of self-esteem would depend on the interpersonal level and agreeableness personality of hearing-impaired students.

Interpersonal skills refer to the qualities of a person such as empathy, social responsibility and satisfy the relationships with others. The empathy factors refer to an awareness of hearing-impaired and understand how others feel. Social responsibility indicates the relationships of hearing-impaired with other social groups. The interpersonal relationships of hearing-impaired students refer to mutually satisfying relationships and relate well with others. Agreeableness personality refers to an awareness of hearing-impaired to the feelings of others, cooperation and pro-social. Both these variables contribute to self-esteem hearing-impaired since these variables

demonstrate that positive and good relationships with others are fundamental to increasing the self-esteem of hearing-impaired students.

The strength of these dominations connected with their ability, which based on their knowledge, skills and attitude towards managing their emotions. With high knowledge, conscious and practice of interpersonal skills, it is expected that hearing-impaired will be able to obtain a high self-esteem. Moreover, by having agreeableness personality, the hearing-impaired are able to build and flourish the generosity and sensitiveness towards other into their life as students. Therefore, the findings proved harmonious interpersonal skills and agreeableness personality influence on the hearing-impaired self-esteem.

5.4 Recommendations

In this present study, several recommendations are highlighted. First, focusing on new curriculum design, intervention program and developing E-counselling website for hearing-impaired. Second, recommendation is focusing on family and normal hearing community by implementing the open sign language programme. Lastly, the CANTAB application on hearing-impaired research was discussed.

5.4.1 New curriculum Designed for Hearing-Impaired

The direction of this intervention program is to develop a special curriculum project which would help introduce a program that would enable hearing-impaired students to develop self-esteem skills through a program aiming at learning about themselves and related crucial self-esteem skills through special activities. The objectives of this

intervention programs are to improve self-esteem, provide opportunities for students to explore and develop their identity as the hearing-impaired role model, boost their cognitive ability and provide opportunities for intrapersonal relationships.

"The Self-esteem and emotional intelligence development program for hearing-impaired students in polytechnics" (SEED) is a new curriculum designed for hearing-impaired students. The curriculum will be designed with ten lessons, which have objectives to meet and connect throughout the week. The curriculum covers two activities per day with five days' worth of activities. This program will furnish them the generic skills, individual autonomy, community independence, and relationships with others. Accomplishing these objectives throughout the semester is quite difficult to achieve but through the efforts and cooperation of polytechnic's management staff (academic staff, administration staff and students) the objectives will be achieved. Time constraint and lack of resources pose difficulties at accomplishing these necessary goals that need attention. For these reasons, planning such a programme that can be practice outside of the class day in a camp/retreat setting is imperative.

The themes of this program may involve communications skills, self-confidence and cross-cultural issues. These issues can be resolved through the self-esteem development programme. The aims of the development programme are to increase the self-esteem level of hearing-impaired students. Further, it may increase the opportunities for them to explore and develop their identity as hearing-impaired and provide opportunities for mixed friendship (normal hearing peers and hearing-

impaired peers). In implementing the above ideas, the following steps are recommended;

a) Developed series of workshop programme on self-esteem and emotional intelligence to be instructed by the respected professional in the psychology field, for the principle of excellent knowledge on self-esteem and emotional intelligence.

b) Special designed emotional intelligence and self-esteem handbook which will be distributed to the counsellors, trainers and lecturers to be used in teaching the essential knowledge on emotional intelligence and self-esteem and as a guide for various programs through special workshops.

c) Proposing specially designed programs to be used for the community field trips and classroom workshop settings. This field trip is aimed to enable hearing-impaired to enhance self-confident in communicating with the community.

5.4.2 Intervention Program

As recommended, polytechnics should hire expert psychologists from universities to advise, plan and organise the intervention programmes of self-esteem and emotional intelligence. Moreover, the intervention programmes should also be handled by a group of experts in a psychological field. The reason for recommending these programmes is made after weighing the lifelong costs and benefits of these programmes on hearing-impaired students. These programmes may improve hearing-impaired attention and memory in the learning process through enhancing their ability in maintaining a good mood and positive relation with others. Therefore, it will benefit

the lecturers in achieving a good quality for their teaching outcomes. The learning process will be facilitated by the use of sign languages.

Moreover, these intervention programmes may help the hearing-impaired students to maintain better personality that will support the employability of the students. Thus, it will benefit the Department of Polytechnic Education (DPE) to achieve the vision of polytechnic to be the main generator of innovative human capital through education and training revolution to meet the global energy needs by the year 2020.

5.4.3 E-Counselling Website for Hearing-Impaired

Counsellors at polytechnics should develop an E-counselling website for hearing-impaired students. The website service should provide an information of hearing-impaired students and tips on guiding the user to understand about the psychology and counselling services. The website may be benefitted and accessible by parents, lecturers, volunteers and anyone who concern, desire to help and supports hearing-impaired students.

In addition, the questionnaires related to psychological tests such as personality test, intelligence test and career test can be uploaded. Through the participation of hearing-impaired students, counsellors acquired will acquired a baseline data and basic information of student's psychological aspect.

Through this system, students who are having problems in terms of emotional, cognitive and social aspects will be identified by counsellors. Counsellors should later

provide individual and group counselling sessions. In fact, it may assist not only counsellors but also support management of the polytechnics in planning and implementing development programs.

The benefit of the website also serves as a medium of hearing-impaired students who wants to experience counselling sessions online. This facilitates counsellors and students to experience counselling sessions without having to go through face to face session. Students do not need to travel to the counsellor's office and this may save time. In addition, there is no risk of students of exposing themselves face-to-face in the waiting room or in the counsellor's office, which some student feels very unpleasant. Students may also choose the option of website service to ask counsellors in a "question and answer" (Q&A) session on the website.

This website may facilitate the hearing-impaired students to voice out their opinions and express their ideas direct to the management of the polytechnic in meeting the needs and rights of polytechnic students. This system will benefit polytechnic staff with lack of sign language skills. The user may be assisted and guided from wherever they are. They only need a computer, tablet or mobile phone. According to Blom, Marschark, Vervloed and Knoors (2014), online medium has become a common activity of student's lives and online communication could be a more comfortable setting for hearing-impaired students than face-to-face communication. Thus, for the long-term benefits on hearing-impaired well-being, emotion, cognitive and social benefits, the management of polytechnics Malaysia should consider the development

of special websites focusing on hearing-impaired students and implement it to all polytechnics which have hearing-impaired students.

5.4.4 Open Sign Language Programme (SyL)

Another recommended programme is the open sign language programme namely "Sign Your Language (SyL)" for normal hearing students, lecturers, polytechnics staff and community. The program focuses on the knowledge and skills in sign languages which aims to train and coach normal hearing people to learn and practice sign languages. Klaudia (2013) has found that hearing-impaired communication skills (spoken and sign languages) affiliate between hearing-impaired and normal hearing community. This will have long-term benefits on the psychological, physical health and mental well-being of the hearing-impaired.

These programmes are important in enhancing communication skills and strengthen the interaction between normal hearing people and hearing-impaired students in polytechnics. Through a good communication and interaction, hearing-impaired students will feel accepted and not discriminated against the normal hearing community. Thus, it will eliminate communication barriers and increase their self-esteem, well-being and emotional intelligence.

5.4.5 The CANTAB Application

The Cognitive Neuropsychological Test Automated Batteries (CANTAB) version 6.0 was performed to measure the hearing-impaired cognitive ability. The CANTAB application in measuring cognitive ability of hearing-impaired using a computer with

a touch-sensitive screen was the first time being applied in Malaysia. The administration of CANTAB did not demand interaction and extensive training between respondents and researchers. Thus, the findings are beneficial for hearing-impaired students and researchers to reduce the communication barriers. Therefore, it recommended to utilise CANTAB in measuring hearing-impaired cognitive ability in Malaysia with different locations as well as different types of institutions.

In summary, it is recommended to all polytechnics to consider the improvement and enhancement of low-level self-esteem and moderate level emotional intelligence of hearing-impaired students. Findings of these present studies have shown that the hearing-impaired in polytechnics have achieved a low level of self-esteem and the moderate level of emotional intelligence. Referring to the participated hearing-impaired in this study, the result has indicated that enhancement of the self-esteem and emotional intelligence of the hearing-impaired students will likely to result in the increasing of their stability in emotion, well-being and cognitive ability performances. Thus, it is suggested that counsellors and lecturers should concentrate on the implementation of programs (new curriculum design, E-counselling website, open sign language program (SyL) and CANTAB application that has been recommended.

5.5 Limitations

There are a few limitations of the study that should be acknowledged while considering the research findings. Nevertheless, the required actions are carried out to assure that these shortcomings will not jeopardise the research findings.

The limitation of the study has somehow related to the cognitive ability variable and its measurement. The researchers have experienced the struggle in finding the existing research material related to the study that has been focusing on hearing-impaired cognitive ability specifically in Malaysia. In previous research and measuring instruments method, it has been found that the aims are only to focus on the certain element of cognitive ability (memory and attention). Moreover, the cognitive ability research in broad is also lacking in Malaysia.

In addition, the focus group of respondents in the present research may also be one of the limitations. The findings may not be generalised to all hearing-impaired students in special education because the study is restricted to hearing-impaired students who are studying in polytechnics in Malaysia.

5.6 Future Research Directions

Future research is essentially needed to enrich the knowledge and understanding of hearing-impaired self-esteem, cognitive ability, personality, psychological well-being and emotional intelligence in polytechnics setting. Certainly, this study has the contributions to introduce foundation for future research. Several appropriate recommendations are further explained.

For the next measure, the replication of the study should involve a large sample size that represents the population of hearing-impaired students in Malaysia essentially. The replication of the research on hearing-impaired students at different locations and different types of institutions feasibly will further generalise the outcomes to the

hearing-impaired students in Malaysia. Considering this present study, it only focusses on polytechnics institutions. Therefore, it is suggested that the research is replicated to hearing-impaired students in higher education institutions in Malaysia so that full representation of cognitive ability, personality, psychological well-being, emotional intelligence and self-esteem level as hearing-impaired students in Malaysia may be studied.

A mixed method engaging both quantitative and qualitative approaches is also suggested for future researchers. A mixed methods design will enhance the researchers' knowledge concerning the explanation of this research through the value of data quality obtained. The questionnaires and interviews assimilate in data collection process will produce better result in investigating human behaviour. The mixed methods of quantitative and qualitative approaches will give more meaningful data since both methods will complement each other. The results acquired from various approach through the mixed method which is quantitative and qualitative will also enlarge the understanding of the problems and create an awareness of these issues.

The Rosenberg self-esteem scale (1965), Bar-On Emotional Quotient: Short (EQ-i:S) (Bar-On, 1997), NEO-FFI (Costa & McCrae, 1992a) and Ryff's psychological well-being scale (PWB) (Ryff, 1989a) was not used to specifically measure hearing-impaired self-esteem, emotional intelligence, personality and psychological well-being in Malaysia. A content validity was performed to confirm the sample population representativeness. In addition, these questionnaires were the pioneer to the new written revision specifically to measure hearing-impaired emotional intelligence,

personality and psychological well-being students in Malaysia. Therefore, it is recommended that the replication of these questionnaires for measuring hearing-impaired self-esteem, emotional intelligence, personality and psychological well-being of this study by using the different sample of hearing-impaired students in a variety of locations with different types of institutions, be carried out in order to strengthen the validity of the instrument.

Future studies should also focus on comparing hearing-impaired students and a group of normal hearing students on cognitive ability, personality, psychological well-being, emotional intelligence and self-esteem. The comparison between normal hearing students and hearing-impaired students will expand the knowledge in psychology and education in identifying differences in emotional and psychological aspect between normal hearing students and hearing-impaired students. Continuing research is needed to help all hearing-impaired students in terms of emotion, cognition and social aspect of life. This is in line with Zheng (2013), who was suggested a research to compare the developmental characteristics of hearing-impaired individuals and normal hearing individuals.

5.7 Summary

Fundamentally, the research has answered all five research questions and achieved the five objectives of the study. Although research in cognitive ability, personality, psychological well-being, emotional intelligence and self-esteem were abundance in social sciences study, this study fills the knowledge gap in self-esteem, hearing-impaired/ special education study and social/ cognitive psychology studies specifically

in Malaysia through indicating emotional intelligence as a significant moderating variable between cognitive ability, personality and psychological well-being of hearing-impaired students. Fifty-three hypotheses were developed to test the relationship between the variables of the study. Based on the findings, twenty-six of them are statistically accepted.

In conclusion, to explain the moderating effect of emotional intelligence on the relationships between hearing-impaired cognitive ability, personality and psychological well-being and their self-esteem level, the study meets valuable results. Emotional intelligence was statistically confirmed as significant moderators on the relationship between hearing-impaired cognitive ability, personality, psychological well-being and self-esteem.

Based on the research findings, this study contributed to the border of understanding in self-esteem research and hearing-impaired/ special education study and social/ cognitive psychology. Relating to practical contribution, the investigation of hearing-impaired self-esteem, their cognitive ability, personality, psychological well-being and emotional intelligence supported the Department of Polytechnic Education (DPE) in Malaysia.

Overall, the findings of this study have contributed to the abundance of the literature content and the perspective of students with hearing impairment in Malaysia educational system as well as the improvement of the human resource practices in education at the Department of Polytechnic Education in Malaysia.

REFERENCES

Abbas, I. (2011). A relationship between emotional intelligence and self esteem: Study in Universities of Pakistan. *Arts and Design Studies*, *1*, 10–15.

Abrams, D., & Hogg, M. A. (1988). Comments on the motivational status of self-esteem in social identity and intergroup discrimination. *European Journal of Social Psychology*, *18*, 317-334.

Abbott, R.A., Ploubidis, G.B., Huppert, F.A., Kuh, D., Wadsworth, E.J., & Croudace, T.J. (2006). Psychometric evaluation and predictive validity of Ryff's psychological well-being items in a UK birth cohort sample of women. *Health and Quality of Life Outcome*. *76*(4), 1-16. doi: 10.1186/1477-7525-4-76

Abdul Aziz , Wald, M & Damper, R. I. (2011). Arabic text to arabic sign language translation system for the deaf and hearing-impaired community. *Proceedings of the 2nd Workshop on Speech and Language Processing for Assistive Technologies* (pp. 101–109). Edinburgh, Scotland, UK.

Acak, M. (2012). Self-esteem levels among hearing impaired athletes participating in the european futsal championship. *Energy Education Science and Technology Part B-Social And Educational Studies*, *4*(3), 1523–1534.

Acak, M., & Kaya, O. (2016). A review of self-esteem of the hearing impaired football players. *Universal Journal of Educational Research*, *4*(3), 524-530. doi.org/ 10.13189/ujer.2016.040308

Ackerman, P. L., & Heggestad, E. D. (1997). Intelligence, personality, and interests: Evidence for overlapping traits. *Psychological Bulletin*, *121*(2), 219-245. doi.org/10.1037/0033-2909.121.2.219.

Acuna, E., & Rodriguez, C. (2004). The treatment of missing values and its effect in the classifier accuracy. *Classification, Clustering and Data Mining Applications*, 639– 648.

Adam Salleh. (2003). *Orang cacat masih terpinggir*. Utusan Malaysia. Retrieved on 24 Disember, 2015 from http://utusan. com.my.

Adams, K.M., & Heaton, R.K. (1987). Computerized neuropsychological assessment: Issues and applications. In J.N. Butcher (Eds), *Computerized psychological assessment* (pp. 355–365). New York: Basic Books.

Adams, K.M., & Heaton, R.K. (1985). Automated interpretation of the neuropsychological test data. *Journal of Consulting and Clinical Psychology*, *53*, 790–802.

Adler, Stier, E. & Clark, R. (Eds.). (2008). *How it's done: An invitation to social research*, (3rd ed.), USA.

Afolabi O.A., (2013). Roles of personality types, emotional intelligence and gender differences on prosocial behavior. *Psychological Thought, 6*(1), 124-139. doi: 10.5964/psyct.v6i1.53

Ahmad S. (2001). *Meeting the global challenges in technical and vocational education: The Malaysian experience, UNESCO TEVT,* Asia Pacific Conference. 26-28 March, Adelaide, Australia.

Ahmad, M. N., Mustaffa, C. S., Mat Saad, Z., Muda, S., Abdullah, S., & Che Din, W.B. (2012). Emotional Intelligence and demographic differences among students in public universities. *Research Journal in Organizational Psychology & Educational Studies, 1*(2), 93-99.

Ali Mahmood. (2007). *OKU perlu terus diberi peluang*. Utusan Malaysia. Retrieved on 06 Julai 2013 from. http://utusan. com.my

Aitao Lu, Yanping Yu, Xiuxiu Hong, Yi Feng, A. H. T. (2014). Peer attachment and loneliness among adolescents who are deaf : The moderating effect of personality. *Social Behavior and Personality, 42*(4), 551–560. doi.org/10.2224/sbp.2014.42.4.551

Akach, P., & Woodford, D. (2000). *Deafness: A guide for parents, teachers and community workers. United* Nations Educational, Scientific and Cultural Organization, UNESCO Document.

Albertini, J. A., Kelly, R. R., & Matchett, M. K. (2011). Personal factors that influence deaf college students' academic success. *Journal of Deaf Studies and Deaf Education, 17*(1), 85–101.

Allik, J., Laidra, K., Realo, A., & Pullman, H. (2004). Personality development from 12 to 18 years of age: Changes in mean levels and structure of traits. *European Journal of Personality, 18,* 445–462.

Allport, G.W. (1961). *Pattern and growth in personality*. New York: Holt, Rinehart, & Winston.

Andersson, U., Lyxell, B., Rönnberg, J., & Spens, K. E. (2001). Cognitive correlates of visual speech understanding in hearing-impaired individuals. *Journal of Deaf Studies and Deaf Education, 6*(2), 103–16. doi:10.1093/deafed/6.2.103

Antia, S.D. (1994). Strategies to develop peer interaction in young hearing-impaired children. *The Volta Review, 96*(4), 277–290.

Antia, S. D., & Kreimeyer, K. H. (2003). Peer interaction of deaf and hard-of- hearing children. In M. Marschark & P. E. Spencer (Eds.). *Oxford handbook of deaf studies, language, and education,* New York: Oxford University Press, 164–176

Ardzulyna. (2013). *Impak kepekakan terhadap perkembangan murid bermasalah pendengaran: Implikasi kepada keperluan sistem sokongan.* (Unpublished masters dissertation). Universiti Pendidikan Sultan Idris Shah, Malaysia

Arkoff, A., Meredith, G. M., Bailey, E., Cheang, M., Dubanoski, R. A., ...Griffin, P. B. (2006). Life review during the college freshman year. *College Student Journal, 40*(2), 263–269.

Arlinger, S., Lunner, T., Lyxell, B., & Pichora-Fuller, M. K. (2009). The emergence of cognitive hearing science. *Scandinavian Journal of Psychology, 50*, 371–384. doi: 10.1111/j.1467-9450.2009.00753.x.

Ataabadi, S., Yusefi, Z., & Moradi, A. (2014). Predicting academic achievement among deaf students: Emotional intelligence, social skills, family communications and self-esteem. *European Journal of Research on Education, 2*(1), 35-46.

Ataabadi, S., Yusefi, Z., & Moradi, A. (2013). Investigation of the multiple relations between emotional intelligence, social skills and self-esteem with family communications among deaf and hard of hearing adolescents. *International Research Journal of Applied and Basic Sciences, 6*(11), 1600–1608.

Austin, E. J., Saklofske, D. H., & Egan, V. (2005). Personality, well-being and health correlates of trait emotional intelligence. *Personality and Individual Differences, 38*(3), 547–558. doi:10.1016/j.paid.2004.05.009

Awad, A., & Shreit, A. (2002). Developing social skills of the children with visual disability. *Modern Education Journal, 61,* 103-186.

Awanis, K. I. (2012). *Personality, occupational stress and wellness among prison officers: The mediating role of self efficacy and perceived fairness.* (Unpublished doctoral dissertation).Universiti Utara Malaysia.

Azizi, Y. (2007). *Menguasai Penyelidikan dalam Pendidikan*. Kuala Lumpur: PTS

Babbie, E. (2004). *Survey research methods.* California: Wadsworth Publishing Company

Baddeley, A. D. (1979). Working memory and reading. In P. A. Kolers, M. E. Wrolstad, & H. Bouma (Eds.), *Processing of visible language* (pp. 355—370). New York: Plenum.

Baddeley, A. D., & Hitch, G. (1974). Working memory. In G. A. Bower (Eds.), *Recent advances in learning and motivation* (vol. 8, pp. 199-241). New York: Academic Press.

Baharom, M. (2011). Teknologi komunikasi dan maklumat dalam program pendidikan khas aliran teknik dan vokasional di Malaysia, *ATIKAN 1*(1), 41–58.

Barak, A., Sadovsky, Y., (2008) Internet use and personal empowerment of

hearing-impaired adolescents. *Computer Human Behaviour, 24*, 1802–1815.

Barchard, K.A & Hakstian, A.R, (2004). The nature and measurement of emotional intelligence abilities: Basic dimensions and their relationships with other cognitive ability and personality variables. *Educational and Psychological Measurement*. *64* (3), 437-462. doi: 10.1177/0013164403261762

Bar-On, R., & Parker, J.D.A. (2000). *The handbook of emotional intelligence*. San Francisco: Josey Bass.

Bar-On, R. (2000). Emotional and social intelligence: Insight from the emotional Quotient Inventory. In R. Bar-On & J. D. A. Parker (Eds.), *The handbook of emotional intelligence: Theory, development, assessment, and application at home, school, and in the workplace* (pp. 363-388). San Francisco: Jossey-Bass.

Bar-On, R. (1997). *The Bar-On emotional quotient inventory (EQ-i): A test of emotional intelligence*. Toronto: Multi-Health Systems.

Bar-On, R. (1997b). *The Bar-on emotional quotient inventory (EQ-i): Technical manual*. Toronto, Canada: Multi-Health Systems.

Baron-Cohen, S., Wheelwright, S., Hill, J., Raste, Y., & Plumb, I. (2001). The "Reading the Mind in the Eyes" test revised version: A study with normal adults, and adults with asperger syndrome or high-functioning autism. *Journal of Child Psychiatry and Psychiatry, 42*, 241–252. doi: 10.1111/1469-7610.00715

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(*6*), 1173–1182

Barrick, M. R., & Mount, M. K. (1991). The big five personality dimensions and job performance: A meta-analysis. *Personnel Psychology, 44*, 1–26. doi: 10.1111/j.1744-6570.1991.tb00688.x

Basu, A., & Mermillod, M. (2011). Emotional intelligence and social-emotional learning: An overview. *Psychology Research, 1*(3), 182-184.

Bat-Chava, Y., & Deignan, E. (2001). Peer relationships of children with cochlear implants. *Journal of Deaf Studies and Deaf Education, 6*, 186–199.

Bat-Chava, Y. (2000). Diversity of deaf identities. *American Annals of the Deaf, 145*, 420–428.

Bat-Chava, Y. (1994). Group identification and self-esteem of deaf adults. *Personality and Social Psychology Bulletin, 20*(5), 494–502. doi:10.1177/0146167294205006

Bat-Chava, Y. (1993). Antecedents of self-esteem in deaf people: A meta-analytic review. *Rehabilitation Psychology, 38*(4), 221–234. doi:10.1037//0090-5550.38.4.221

Batten, G. , Oakes, P. M., & Alexander, T. (2013). Factors associated with social interactions between deaf children and their hearing peers: A systematic literature review. *Journal of Deaf Studies and Deaf Education*. doi:10.1093/deafed/ent052

Bazlina Basarahim (2008). *Kemahiran menvisualisasi ruang dalam kalangan pelajar pendidikan khas (cacat pendengaran) politeknik kementerian pengajian tinggi Malaysia.* Unpublished master dissertation. Kolej Universiti Teknologi Tun Hussein Onn, Malaysia.

Beitchman, J. H.; Wilson, B.; Brownlie, E.B.; Walters, H.; Inglis, A. & Lancee, W. (1996). Long-Term consistency in speech/language profiles: Behavioral, emotional, and social outcomes. *Journal of the American Academy of Child & Adolescent Psychiatry. 35(6),* 815-825.

Berk, L. E. (1997). *Child development* (4th ed.), Needham Heights: Allyn and Bacon

Beshears, R. S. (2004). *The Ability of emotional intelligence to predict transformational leadership when personality, affect, and cognitive ability are controlled*. (Unpublished doctoral dissertation).Wayne State University.

Bhullar, N., Schutte, N. S., & Malouff, J. M. (2012). Trait emotional intelligence as a moderator of the relationship between psychological distress and satisfaction with life. *Individual Differences Research, 10,* 19–26.

Bishop, J. A., & Inderbitzen, H. M. (1995). Peer acceptance and friendship: An investigation of their relation to self- esteem. *Journal of Early Adolescence*, *15,* 489. doi/abs/10.1177/0272431695015004005

Black, P. A., & Glickman, N. S. (2006). Demographics, psychiatric diagnoses, and other characteristics of North American deaf and hard-of-hearing inpatients. *Journal of Deaf Studies and Deaf Education*, *11*(3), 303–21. doi:10.1093/deafed/enj042

Blascovich, J., & Tomaka, J. (1991). The Self-Esteem Scale. In J.P. Robinson, P. R. Shaver, & L.S. Wrightsman (Eds.), *Measures of personality and social psychological attitudes.* San Diego, CA: Academic Press.

Blom, H., Marschark, M., Vervloed, M.P.J., & Knoors, H. (2014). Finding friends online: online activities by deaf students and their well-being. *PLOS ONE,* 9(*2*), 1-10.

Burns, R.B. (1979). *The self-concept : In theory, measurement, development and behavior*. London : Longman Group Limited.

Bradburn, N. (1969). *The structure of psychological well-being.* Chicago: Aldine.

Brackett, M. A., & Mayer, J. D. (2003). Convergent, discriminant, and incremental validity of competing measures of emotional intelligence. *Personality and Social Psychology Bulletin, 29,* 1147–1158. doi:10.1177/0146167203254596

Braden, J. P., & Athanasiou, M. S. (2005). A comparative review of nonverbal measures of intelligence. In D. P. Flanagan & P. L. Harrison (Eds.), *Contemporary intellectual assessment: Theories, tests, and issues* (2nd ed., pp. 557-577). New York: Guilford Press

Braden, J. P. (2005). Hard-of-hearing and deaf clients: Using the WISC-IV with clients who are hard-of-hearing or deaf. In A. Prifitera, D. H. Saklofske., & L. G. Weiss (Eds.), *WISC-IV clinical use and interpretation* (pp. 351-376). San Diego, CA: Elsevier Academic Press.

Braden, J. P., Kostrubala, C. E., & Reed, J. (1994). Why do deaf children score differently on performance VS motor-reduced nonverbal intelligence tests? *Journal of Psychoeducational Assessment, 12,* 357-363. doi: 10.1177/073428299401200405

Braden, J. P. (1992). Intellectual assessment of deaf and hard-of-hearing people: Quantitative and qualitative research synthesis. *School Psychology Review, 21,* 82–95.

Braden, J. P. (1984). The factorial similarity of the WISC-R Performance scale in deaf and hearing children. *Journal of Personality and Individual Differences, 5,* 405-409.

Breckler, S., & Greenwald, A. G. (1986). Motivational facets of the self. In R. L. Sorrentino., & E. T. Higgins (Eds.), *Handbook of motivation and cognition* (pp. 145-164). New York: Guilford.

Brewer, M. B., & Miller, N. (1996). *Intergroup relations.* Buckingham: Open University Press.

Brody, N., & Taylor, P. (2013). What cognitive intelligence is and what emotional intelligence is not. *The Psychological Inquiry*, *15*(3), 234–238.

Brown, R. J., & Turner, J. C. (1979). The criss-cross categorization effect in intergroup discrimination. *British Journal of Social and Clinical Psychology, 18,* 371-383. doi: 10.1111/j.2044-8260.1979.tb00907.x

Brunnberg, E., Lindén Boström, M., & Berglund, M. (2007). Self-rated mental health, school adjustment, and substance use in hard-of-hearing adolescents. *Journal of Deaf Studies and Deaf Education Advance Access, 13,* 324-335. doi: 10.1093/deafed/enm062

Campbell, J.D., & Lavallee, L.D. (1993). Who am I? The role of self-concept

confusion in understanding the behavior of people with low self-esteem. In: R.F. Baumeister, (Eds.), *Self-esteem: The puzzle of low self-regard.* Plenum, New York.

Campbell, A. (1981). *The sense of well-being in America*. New York: McGraw-Hill.

Canfield, J. & Miller, J. (1996). *Heart at work: Stories and strategies for building self-esteem and reawakening the soul at work.* USA: McGraw Hill.

CANTAB*: Cognitive test neuropsychological test automated batteries*. (Version 6.0) (2015). England: Cambridge Cognition Ltd

Calderon, R., & Greenberg, M. T. (2003). Social and emotional development of deaf children. Family, school and program effects. In M. Marschark., & P. E. Spencer (Eds.), *The Oxford handbook of deaf studies, language, and education* (pp. 177–189). New York, NY: Oxford University Press.

Carroll, J. B. (1993). *Human cognitive abilities: A survey of factor-analytic studies*. New York: Cambridge.

Cates, J. A., & Lampham, R. F. (1991). Personality assessment of prelingual, profoundly deaf child or adolescent. *American Annals of the Deaf*. *136*(4), 354-359. doi 10.1353/aad.2012.0499.

Chen, G. (2014). Influential factors of deaf identity development. *Electronic Journal for Inclusive Education, 3*(2).

Cheng, S.T., & Chan, A. C. M. (2005). Measuring psychological well-being in the Chinese. *The Personality and Individual Differences, 38*(6), 1307–1316. doi:10.1016/j.paid.2004.08.013

Cheng, H., & Furnham, A. (2003). Attributional style and self-esteem as predictors of psychological well being. *Counseling Psychology Quarterly, 16*(2), 121–130. doi:10.1080/0951507031000151516

Ciarrochi, J.V., Deane, F. P., & Anderson, S. (2002). Emotional intelligence moderates the relationship between stress and mental health. *Personality and Individual Differences, 32*(2), 197–209. doi:10.1016/S0191-8869(01)00012-5

Ciarrochi, J.V., Chan, A.Y.C., & Caputi, P. (2000). A critical evaluation of the emotional intelligence construct. *Personality and Individual Differences, 28* (3), 539-561. doi.org/10.1016/S0191-8869(99)00119-1

Coakes, S. J., & Steed, G. (2003). *SPSS: Analysis without anguish*. Sydney: John Wiley & Sons Australia

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112,* 155– 159. doi:10.1037/0033-2909.112.1.155

Conway, C.M., Pisoni, D.B., & Kronenberger, W.G., (2009). The importance of

sound for cognitive sequencing abilities: The auditory scaffolding hypothesis. *Current Directions in Psychological Science*, *18*(5), 275–279. doi: 10.1111/j.1467-8721.2009.01651.x.

Cooley, C. H. (1902). *Human nature and the social order.* (7th ed.), USA: Transaction Publishers.

Coopersmith, S. (1967). *The antecedents of self-esteem.* Freeman. Retrieved 07 May 2014 from http://www.worldcat.org/title/antecedents-of-self-esteem/oclc/223092

Costa, P. T., & Widiger, T. A. (Eds.). (1994). *Personality disorders and the five-factor model of personality*. Washington, DC: American Psychological Association.

Costa, P. T., Jr., & McCrae, R. P. (1992). *The revised NEO Personality Inventory (NEO-PI-R) and NEO Five-Factor Inventory (NEO-FFI) professional manual.* Odessa, FL: Psychological Assessment Resources

Costa, P. T., Jr. (1985). *The NEO personality inventory manual*. Odessa, FL. Psychological Assessment Resources.

Coull, J. T., Middleton, H. C, Robbins, T. W., & Sahakian, B.J. (1995). Contrasting effects of clonidine and diazepam on tests of working memory and planning. *Psvchopharmacology, 120,* 311-321.

Cramer, D., & Howitt, D. (2004). *The SAGE dictionary of statistics*. Retrieved from file:///C:/Users/Asus/Downloads/Dictionary_of_Statistics_(SAGE_2004).pdf.

Creswell, J. W. (2012). *Educational research planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). USA: Pearson.

Creswell, J.W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches*. (3rd ed.) California: SAGE Publications, Inc.

Carrington, D., & Whitten, H., (2005). *Future Directions: Practical ways to develop emotional intelligence and confidence in young people*. Stafford: Network Educational Press Ltd.

Crocker, J., & Luhtanen, R. (1990). Collective self-esteem and ingroup bias. *Journal of Personality and Social Psychology*, *58,* 60-67. doi: 10.1037/0022-3514.58.1.60

Cronbach, L. J. (1971). Test validation. In R. L. Thorndike (Ed.), *Educational measurement* (2nd ed.). Washington, DC: American Council on Education.

Crowe, T. V. (2003). Self-esteem among deaf college students: An examination of gender and parents' hearing status and signing ability. *Journal of Deaf Studies and Deaf Education, 8,* 199–206. Retrived 05 June, 2015, from http://www.ncbi.nlm.nih.gov/pubmed/15448068

Dammeyer, J. (2010) Psychosocial development in a Danish population of children

with cochlear implants and deaf and hard-of-hearing children. *Journal of Deaf Studies and Deaf Education, 15,* 50–58.

Dattalo, P. (2008). *Determining sample size balancing power, precision, and practicality*. (1st ed.) USA: Oxford University Press, Inc.

Daus, C. S., & Ashkanasy, N. M. (2005). The case for the ability-based model of emotional intelligence in organizational behavior. *Journal of Organizational Behavior,* 26, 453-466.

Davis, A., & Hind, S. (1999). The impact of hearing impairment: A global health problem. *International Journal of Pediatric Otorhinolaryngology*, *49* (1), 51–54. doi:10.1016/S0165-5876(99)00213-X

Davis, S. K., & Humphrey, N. (2012). Emotional intelligence as a moderator of stressor-mental health relations in adolescence: Evidence for specificity. *Personality and Individual Differences, 52,* 100–105. doi:10.1016/j.paid.2011.09.006

Department Of Polytechnic. (2013). *Halatuju Transformasi Politeknik* KPT/JPP/BPD/01/2010(1). ISBN 978-983-3663-42-2, Kementerian Pengajian Tinggi, Kuala Lumpur Malaysia.

Desselle D.D. (1994). Self-esteem, family climate, and communication patterns in relation to deafness. *American Annals of the Deaf, 139*(3), 322-328. doi: 10.1111/j.1467-9450.2009.00753.x

Diaz, D., Rodriguez-Carvajal, R., Blanco, A., Moreno-Jimenez, B., Gallardo, I., ...Valle, C. (2006). Spanish adaptation of the psychological well-being scales (PWBS). *Psicothema, 18* (3), 572-577.

Diener, E. (1984). Subjective well-being. *Psychological Bulletin, 95,* 542–575. doi:10.1037/0033-2909.95.3.542

Dierendonck, D., Díaz, D., Rodríguez-Carvajal, R., Blanco, A., & Moreno-Jiménez, B. (2007). Ryff's six-factor model of psychological well-being, a Spanish exploration. *Social Indicators Research, 87*(3), 473–479. doi:10.1007/s11205-007-9174-7

Drury, D. W., Gail, E., & Alexander, K. L. (1980). Black self-esteem and desegregated schools. *Sociology of Education, 53*(2), 88–103. doi: 10.2307/2112491

Dyck, M. J., Farrugia, C., Shochet, I. M., & Holmes-Brown, M. (2004). Emotion recognition/understanding ability in hearing or vision-impaired children: Do sounds, sights, or words make the difference? *Journal of Child Psychology and Psychiatry, and Allied Disciplines, 45*(4), 789–800. doi:10.1111/j.1469-7610.2004.00272.x

Dye, M. W. G., & Hauser, P. C. (2014). Sustained attention, selective attention and cognitive control in deaf and hearing children. *Hearing Research, 309*, 94–102. doi:10.1016/j.heares.2013.12.001

Ehlers, S., Nyden, A., Gillberg, C., Sandberg, A. D., Dahlgren, S., Hjelmquist, E., & Oden, A. (1997). Asperger syndrome, autism and attention deficits disorders: A comparative study of cognitive profiles of 120 children. *Journal of Child Psychology and Psychiatry and Allied Disciplines, 38*, 207-217. doi: 10.1111/j.1469-7610.1997.tb01855.x

Eldik, V. T., Treffers, P. D., Veerman, J. W., & Verhulst, F. C. (2004). Mental health problems of deaf children as indicated by parents' response to the child behavior checklist. *American Annals of the Deaf, 148*, 390–395.

Emerton, R. G. (1996). Marginality, biculturalism, and social identity of deaf people. In I. Parasnis (Ed.), *Cultural and language diversity and the deaf experience* (pp.136–145). New York: Cambridge University Press

Engle, R. W., & Kane, M. J. (2004). Executive attention, working memory capacity, and a Two-Factor Theory of cognitive control. In B. Ross (Ed.), *The psychology of learning and motivation* (pp. 145–199). New York: Academic Press.

Ericsson, K. A., & Kintsch, W. (1995). Long-term working memory. *Psychological Review, 102*, 211–245.

Fagan, T. K. (2002). School psychology: Recent descriptions, continued expansion, and an ongoing paradox. *School Psychology Review*, *31*(1), 5-10.

Fatimah, A. (2012). Parents urged to discard fear of sending disabled children to school. *The New Straits Times*. Retrieved 18 December, 2014, from https://my.news.yahoo.com/parents-urged-discard-fear-sending-disabled-children-school-064208255.html

Fazlinda, A. H. (2013). *Kemahiran kebolehgajian, estim kendiri dan efikasi kendiri pelajar teknikal dan vokasional yang bermasalah pendengaran di politeknik dan kolej komuniti, Malaysia.* (Unpublished doctoral dissertation).Universiti Putra Malaysia.

Fellinger, J., Holzinger, D., Sattel, H., & Laucht, M. (2008). Mental health and quality of life in deaf pupils. *European Child & Adolescent Psychiatry*, *17*(7), 414–23. doi:10.1007/s00787-008-0683-y.

Fellinger, J., Holzinger, D., Dobner, U., Gerich, J., Lehner, R., Lenz, G., & Goldberg, D. (2005). Mental distress and quality of life in a deaf population. *Social Psychiatry and Psychiatric Epidemiology*, *40*(9), 737–42.doi:10.1007/s00127-005-0936-8

Feng, K. & Jingjing, Z. (2012). Affective mediators of the relationship between trait emotional intelligence and life satisfaction in young adults. *Personality and Individual Differences, 54* (2), 197-201. doi:10.1016/j.paid.2013.01.007

Fernandez-Berrocal, P. & Checa P. (2016). Editorial: Emotional intelligence and cognitive abilities. *Front. Psychol*. *7*, 955. doi: 10.3389/fpsyg.2016.00955

Ferrando, M., Prieto, M.D., Almeida, L.S., Ferrándiz, C., Bermejo, R., López-Pina, J.A., Hernández, D., & ...Mari-Carmen Fernández. (2010). Trait emotional intelligence and academic performance: Controlling for the effects of IQ, personality, and self-concept. *Journal of Psychoeducational Assessment . 29* (2), 150-159. doi: 10.1177/0734282910374707

Field, A. P. (2005). *Discovering Statistics using SPSS.* (2nd ed.) London: SAGE Publications, Inc.

Fishbein, M., & Ajzan, I. (1975). *Believe, attitude, introduction to theory and research*, Oxford Press, New York.

Flanagan, D. P., & McGrew, K. S. (1997). A cross-battery approach to assessing and interpreting cognitive abilities: Narrowing the gap between practice and cognitive science. In D. P. Flanagan, J. L. Genshaft, & P. L. Harrison (Eds.), *Contemporary intellectual assessment: Theories, tests, and issues,* (pp. 314-325). New York: Guilford.

Flanagan, D. P., & Harrison, P. L. (2005). *Contemporary intellectual assessment: Theories, tests, and issues* (2nd ed.). New York: Guilford Press.

Flanagan, D. P., Ortiz, S. O., Alfonso, V. C., & Mascolo, J. T. (2002). *The achievement test desk reference (ATDR).* Boston: Allyn & Bacon.

Flanagan, D. P., & Ortiz, S. (2001). *Essentials of cross-battery assessment.* New York: John Wiley & Sons, Inc.

Flouri, E., Mavroveli, S., & Panourgia, C. (2013). The role of general cognitive ability in moderating the relation of adverse life events to emotional and behavioural problems. *British Journal of Psychology, 104,* 130-139doi:10.1111/j.2044-8295.2012.02106.x

Fong, C.O. (2006). *Managing human capital in the globalised era*. Public services conference, 21 August, INTAN Bukit Kiara, Malaysia.

Ford, F. G. (1968). Reactions of hearing-impaired child to school situations. *Peabody Journal of Education, 46* (3), 177–179.

Foster, S. B. (1998). Communication experiences of deaf people: An ethnographic account. In I. Parasnis (Ed.), *Cultural and language diversity and the deaf experience* (pp. 117–135). New York: Cambridge University Press

Frey, D., & Carlock, C. J. (1989). *Enhancing self-esteem* (2nd ed.). Muncie, IN: Accelerated Development.

Fusick, L. (2008). Serving clients with hearing loss: Best practices in mental health counseling. *Journal of Counseling and Development, 86*, 102–110.

Fulmer, C. A., Gelfand, M. J., Kruglanski, A. W., Kim-Prieto, C., Diener, E., Pierro, A., & Higgins, E. T. (2010). On "feeling right" in cultural contexts: How person-culture match affects self-esteem and subjective well-being. *Psychological Science, 21*(11), 1563–1569. doi:10.1177/0956797610384742

Garb, H.N., & Schramke, C.J. (1996). Judgment research and neuropsychological assessment: A narrative review and meta-analysis. *Psychological Bulletin, 120*, 140–153. doi: 10.1037/0033-2909.120.1.140

Geers, A. E., & Moog, J. (1994). Spoken language results: Vocabulary, syntax and communication. *Volta Review, 96*, 131–148.

Glickman, N. (1996). The development of culturally deaf identities. In: N. Glickman, & M. Harvey (Eds.), *Culturally Affirmative psychotherapy with deaf persons* (pp. 115–153). Mahwah, NJ: Lawrence Erlbaum

Gliem, J.A., & Gliem, R. R. (2003). *Calculating, interpreting, and reporting Cronbach's alpha reliability coefficients for Likert-type scales.* Paper presented at the Midwest research-to-practice conference in adult, continuing, and community education, the Ohio State University, Columbus, OH, Oct. 8-10, 2003.

Goleman, D. (1995). *Emotional Intelligence: Why it can matter more than IQ*. New York: Bantam Books.

Golden, C.J. (1987). Computers in neuropsychology. In J.N. Butcher (Ed.), *Computerized psychological assessment: A practitioner's guide* (pp. 344–355). New York: Basic Books.

Gopnik, A., & Wellman, H. M. (1994). The theory. In L. Hirschfeld & S. Gelman (Eds.), *Domain specificity in cognition and culture* (pp. 257–293). New York: Cambridge University Press

Görgens-Ekermans, G., & Brand, T. (2012). Emotional intelligence as a moderator in the stress-burnout relationship: A questionnaire study on nurses. *Journal of Clinical Nursing, 21*(15-16), 2275–2285. doi:10.1111/j.1365-2702.2012.04171.x

Guardia, J.G.L., & Ryff, C. D. (2003). Self-esteem challenges. *Psychological inquiry, 14* (1), 48-51.

Guttman, L. (1992). The irrelevance of factor analysis for the study of group differences. *Multivariate Behavioral Research, 27*, 175-204.

Hair, J. F., Black, B., Babin, B., and Anderson, R. E., (2014). *Multivariate Data Analysis.* (7th ed.), New Jersey, USA: Pearson Education Inc.

Hair, J. F., Money, A., Samouel, P., & Page, M. (2007). Research methods for business. Great Britain: John Wiley & Sons Ltd.

Hallam, R., Ashton, P., Sherbourne, K., & Gailey, L. (2006). Acquired profound hearing loss: Mental health and other characteristics of a large sample. *International Journal of Audiology, 45*, 715–723. doi: 10.1080/14992020600957335.

Hallgren, M., Larsby, B., Lyxell, B., & Arlinger, S. (2001). Cognitive effects in dichotic speech testing in elderly persons. *Ear and Hearing, 22*, 120–129.

Hamidi, I., Ab Halim, T., Rosadah, A.M., & Safani, B. (2012). Amalan pengajaran guru dalam pengajaran dan pembelajaran pendidikan islam di sekolah kebangsaan pendidikan khas (masalah pendengaran), *Journal of Islamic and Arabic Education*, *4*(2), 2012 11-24.

Hanafi, M.Y., Safani, B., & Rosman, S., (2012). Emotional intelligence among deaf and hard of hearing children. *The Social Sciences*. *7* (5), pp.679-682. doi: 10.3923/sscience.2012.679.682

Happe, & Frith. U. (1995). Theory of mind in autism. In E. Schopler & G. B. Mesibov, (Eds.), *Learning and cognition in autism* (pp. 177-197). New York: Plenum Press.

Harter. S. (2006) Self-processes and developmental psychopathology. In D. Cicchietti, & D.J. Cohen, *Developmental psychopathology*. Hoboken, NJ: Wiley & Sons. pp. 370–418.

Harter, S., Waters, P. & Whitesell, N. R. (1998). Relational self-worth: Differences in perceived worth as a person across interpersonal contexts among adolescents. *Child Development*, *69*, 756–766. doi: 10.2307/1132202

Harvey, E. R. (2008). Deafness: A Disability or a Difference. *Health Law & Policy*, 2(*1*), 42-57

Hasnan and Syed Othman. (2001). Dasar dan pelaksanaan sistem pendidikan kebangsaan. *Utusan Malaysia*. Retrived 28 Julai 2014 from http://utusan.com.my

Hauser, P. C., Lukomski, J., & Isquith, P. (2009). *Deaf college students' performance on the BRIEF-A and Connors.* Manuscript in preparation

Heatherton, T. F., & Polivy, J. (1991). Development and validation of a scale for measuring state self-esteem.. *Journal of Personality and Social Psychology*, *60*, 895-910. doi:10.1037/0022-3514.60.6.895

Heward, W. (2000). *Exceptional children: An introduction to special education*. (1st ed.), Ohio: Merrill.

Hill, R. (1998). What sample size is "enough" in internet survey research? Interpersonal computing and technology. *An Electronic Journal for the 21st Century*, *6*, 3-4.

Hindley, P. A. (1997). Psychiatric aspects of hearing impairment. *Journal of Child Psychology, Psychiatry, and Allied Disciplines, 38*, 101-117.

Hindley, P. A., Hill, P. D., McGuigan, S., & Kitson, N. (1994). Psychiatric disorder in deaf and hearing impaired children and young people: A prevalence study. *Journal of Child Psychology and Pscychiatry*, *35*, 917-934.

Hintermair, M. (2008). Self-esteem and satisfaction with life of deaf and hard-of-hearing people—A resource-oriented approach to identity work. *Journal of Deaf Studies and Deaf Education, 13*, 278–300. doi: 10.1093/deafed/enm054.

Hintermair, M. (2006). Parental resources, parental stress and socioemotional development of deaf and hard of hearing children. *Journal of Deaf Studies and Deaf Education, 11*, 493–513. doi: 10.1093/deafed/enl005

Hogg, M. A., & Abrams, D. (1988). *Social identifications: A social psychology of intergroup relations and group processes.* London: Routledge.

Horn, J. L., & Noll, J. A. (1997). Human cognitive abilities: Gf-Gc theory. In D. P. Flanagan. J. L. Genshaft, & P. L. Harrison (Eds.), *Contemporary intellectual assessment: Theories, tests, and issues* (pp. 53-91). New York: Guilford.

Horowitz, S.M., Irwin, J. R., Briggs-Gowan, M.J., Bosson Heenan, J.M., Mendoza, J., & Carter, A. S. (2003). Language Delay in a Community Cohort of Young Children. *Journal of the American Academy of Child & Adolescent Psychiatry. 42(8),* 932-940. doi: 10.1097/01.CHI.0000046889.27264.5E

Howley, M., & Howe, C., (2004). Social interaction and cognitive growth: An examination through the role-taking skills of deaf and hearing children. *British Journal of Developmental Psychology*. *22* (2), 219-243. doi : 10.1348/026151004323044582

Huber, M. (2005). Health-related quality of life of austrian children and adolescents with cochlear implants. *International Journal of Pediatric Otorhinolaryngology 69*(8): 1089–1101.

Huenerfauth, M., Zhao, L., Gu, E., & Allbeck, J. (2007). Evaluating american sign language generation through the participation of native ASL signers. *Proceedings of the 9th international ACM SIGACCESS conference on Computers and accessibility*. doi: 10.1145/1296843.1296879

Hughes, M., & Demo, D. (1989). Self-Perceptions of Black Americans: Self-Esteem and Personal Efficacy. *American Journal of Sociology*, 95(*1*), 132-159.

Humphries, T. (1996). Of deaf-mutes, the strange, and the modern deaf self. In N. S. Glickman & M. A. Harvey (Eds.), *Culturally affirmative psychotherapy with deaf persons*. Mahwah, NJ: Lawrence Erlbaum Associates.

Hunter, J. E. (1986). Cognitive ability, cognitive aptitudes, job knowledge, and jobperformance. *Journal of Vocational Behavior, 29* (3), 340-362. doi: 10.1016/0001-8791(86)90013-8

Huntington, D.D., & Bender, W.N. (1993). Adolescents with learning disabilities at risk? Emotional well-being, depression, suicide. *Journal of Learning Disabilities, 26*, 159-166. doi: 10.1177/002221949302600303

Huppert, F. A. (2009). Psychological well-being: Evidence regarding its causes and consequences. *Applied Psychology: Health and Well-Being*, *1*, 137–164. doi:10.1111/j.1758-0854.2009.01008.x

Isaac, S., & Michael, W. B. (1995). *Handbook in research and evaluation*. San Diego, CA: Educational and Industrial Testing Services.

Jacks, M., Marsh, D., & Massey, C. (2000). *Welcome to the silent zone multimedia courseware on sign language.* ACM SIGBIO Newsletter, *20*(1), 17-19

Jambor, E., & Elliott, M. (2005). Self-esteem and coping strategies among deaf students. *Journal of Deaf Studies and Deaf Education*, *10*(1), 63–81. doi:10.1093/deafed/eni004

Jamila, K.A., Mohd Hanafi, M.Y., & Rosadah, A.M. (2012). Pelaksanaan Pengajaran kemahiran membaca dan menulis dalam bahasa melayu bagi murid prasekolah bermasalah pendengaran. *Jurnal Pendidikan Bahasa Melayu, 2* (2), 111–127.

Jirim @ George Toysim (1998). *Persepsi guru-guru pendidikan khas mengenai sikap murid-murid cacat pendengaran terhadap pembelajaran.* (Unpublished masters dissertation). Universiti Malaysia Sarawak, MalaysiaJames, W. (1890). *The principles of psychology*. New York: Holt.

Johanson, G. A.& Brooks, G. P. (2010). Initial scale development: Sample size for pilot studies. *Educational and Psychological Measurement, 70* (3), 394-400. doi: 10.1177/0013164409355692

Johar, S. S. H., Shah, I. M., & Bakar, Z. A. (2013). Neuroticism personality and emotional intelligence of leader, and impact towards self-esteem of employee in organization. *Procedia Social And Behavioral Sciences*, *84*, 431–436. doi:10.1016/J.Sbspro.2013.06.580

John, O. P., & Srivastava, S. (1999). The big five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of Personality: Theory and research* (pp. 102–138). New York: Guilford

John, O. P., Donahue, E. M., & Kentle, R. L. (1991). *The Big Five Inventory Versions 4a.* Berkeley: University of California, Berkeley, Institute of Personality and Social Research.

Joiner, T. E., Jr., Alfano, M. S., & Metalsky, G. I. (1992). When depression breeds contempt: Reassurance seeking, self-esteem, and rejection of depressed college students by their roommates. *Journal of Abnormal Psychology, 101*, 165–173. doi:10.1037/0021-843X.101.1.165

Jordan, M.E. (2011). *Personality traits: Theory, testing and influences*. (1st ed.), New York: Nova Science Publishers, Inc. All.

Joseph, D. L., & Newman, D. A. (2010). Emotional intelligence: An integrative meta-analysis and cascading model. *Journal of Applied Psychology, 95*, 54-78. doi:10.1037/a0017286

Judge, T. A., Heller, D., & Mount, M. K. (2002). Five-factor model of personality and job satisfaction: A meta-analysis. *Journal of Applied Psychology, 87* (3), 530–541. doi: 10.1037//0021-9010.87.3.530

Jung, V. & Short, R.H. (2002). Integrated perspective of evolving intrapsychic and person-environment functions: Implications for deaf and hard of hearing individuals. *American Annals of the Deaf, 147*(3), 26-34.

Kaare, P.-R., Mõttus, R., & Konstabel, K. (2009). Pathological gambling in estonia: Relationships with personality, self-esteem, emotional states and cognitive ability. *Journal Of Gambling Studies, 25* (3), 377–390. doi:10.1007/S10899-009-9119-Y

Kahneman, D., Diener, E., & Schwarz, N. (Eds.) (1999). *Well-being: Foundations of hedonic psychology*. New York: Russell Sage Foundation Press.

Kamil, R.J., & Lin, F.R. (2015) The Effects of hearing impairment in older adults on communication partners: A systematic review. *Journal of American Academic Audiology. 26*, 155-182. doi: 10.3766/jaaa.26.2.6

Kanapathy, V. (1997). *Labour market issues and skills training: Recent development in Malaysia.* Pacific economic cooperation council human resource development task force meeting, Montreal, Canada.

Kane, R.L., & Kay, C.G. (1992). Computerized assessment in neuropsychology: A review of tests and test batteries. *Neuropsychology Reviews, 3*(1),

Kaplan, E. (1988). A process approach to neuropsychological assessment. In T. Boll & B.K. Bryant. (Eds.), *Clinical neuropsychology and brain function: Research, measurement, and practice*. Washington, DC: American Psychological Association.

Keilmann, A., Limberger, A., & Mann, W.J. (2007). Psychological and physical well-being in hearing-impaired children.. *International Journal of Pediatric otorhinolaryngology. 71* (11), 1747-1752. doi: 10.1016/j.ijporl.2007.07.013

Kelly, L., & Barac-Cikoja, D. (2007). The comprehension of skilled deaf readers: The roles of word recognition and other potentially critical aspects of competence. In

K. Cain & J. Oakhill (Eds.), *Children's comprehension problems in oral and written language: A cognitive perspective* (pp. 244-280). New York, NY: The Guilford Press.

Keyes, C. L. M., Shmotkin, D., & Ryff, C. D. (2002). Optimizing well-being: The empirical encounter of two traditions. *Journal of Personality and Social Psychology, 82*, 1007–1022. doi: 10.1037/0022-3514.82.6.1007

Khor, H. (2002). *Employment of persons with disabilities in Malaysia*. Penang: Penang State Government

Klassen, M. S. C. (2010). *Examining the appropriateness of nonverbal measures of intelligence with deaf and hard-of-hearing children : A critical review of the literature.* Unpublished doctoral dissertation, Pepperdine University.

Klaudia, K. (2013). The benefits of sign language for deaf children with and without cochlear implant(s). *European Scientific Journal, 4,* 341-349.

Kluwin, T. N., Stinson, M. S. & Colarossi G. M. (2002). Social processes and outcomes of in-school contact between deaf and hearing peers. *Journal of Deaf Studies and Deaf Education, 7* (3): 200–213. doi: 10.1093/deafed/7.3.200

Knoors, H. & Marschark, M. (2014). *Teaching deaf learners: Psychological and developmental foundations.* New York, NY: Oxford University Press

Knyazev, G. G., Zupancic, M., & Slobodskaya, H. R. (2008). Child personality in Slovenia and Russia: Structure and mean level of traits in parent and self-ratings. *Journal of Cross Cultural Psychology, 39* (3), 317– 334. doi: 10.1177/0022022108314542

Kogovsek, D. (2015). Self-esteem of deaf and hard of hearing compared with hearing adolescents in Slovenia – The context of social and communication factors. *Journal of Special Education and Rehabilitation, 16*(4), 30– 51. doi: 10.1515/JSER-2015-0010

Kogovsek, D. (2007). *The role of the cultural identity for the rehabilitation of deaf adolescents.* Unpublished doctoral dissertation. University of Ljubljana.

Kong, F., Zhao, J., & You, X. (2012). Emotional intelligence and life satisfaction in Chinese university students: The mediating role of self-esteem and social support. *Personality and Individual Differences, 53,* 1039–1043. doi: 10.1016/j.paid.2012.07.032

Kothari, C. R. (2004). *Research methodology: Methods and techniques*. (2nd ed). New Delhi: New Age International publisher.

Kouwenberg, M. (2013). *Social-emotional factors underlying internalizing problems, peer relations in deaf or hard of hearing youth.* Leiden, the Netherlands: Leiden University

Kouwenberg, M., Rieffe, C., Theunissen, SCPM., & de Rooij, M., (2012). Peer victimization experienced by children and adolescents who are deaf or hard of hearing. *PLoS ONE 7*. doi:10.1371/journal.pone.0052174

Krejcie, R.V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, *30*, 607-610.

Kushnerenko, E., Tomalski, P., Ballieux, H., Potton, A., Birtles, D., Frostick, C., & Moore, D.G. (2013). Brain responses and looking behavior during audiovisual speech integration in infants predict auditory speech comprehension in the second year of life. *Front. Psychology, 4* (432). doi: 10.3389/fpsyg.2013.00432

La, J.G., & Ryff, C.D. (2003). Self-esteem challenges. *Psychological Inquiry*, *14*(1), 48–51. doi: 10.2307/2112491

Ladd, P. (2003). Understanding deaf culture. In search of deafhood. Multilingual Matters: Cleveton, UK

Lane, H., Hoffmeister, R., & Bahan, B. (1996). *A Journey into the deaf-world*. San Diego, CA: Dawn Sign Press.

Lau, T.K., Phang, Y.N., & Zainuddin A. (2009). *Statistics for UiTM*. (2nd ed). Kuala Lumpur: Fajar Bakti sdn, Bhd.

Lee, J. P. (2008). Designing an art & design abilities matching model based on the Theory of Multiple Intelligences (MI): How the MI profiling model assists art & Design students in selecting programmes of study and in understanding of their Designing. *An Art & Design Ability*, 1–35. doi:10.1016/j.sbspro.2013.12.237

Lee, S., Kang, S., Ko, H., Yoon, J., & Keum, M. (2013). *Dialogue enabling speech-to-text user assistive agent with auditory perceptual beamforming for hearing-impaired.* 2013 IEEE International Conference on Consumer Electronics (ICCE), 360–361. doi:10.1109/ICCE.2013.6486929

Leigh, I.W. (2009). *A lens on deaf identities.* New York: Oxford University Press.

Leigh, I. W. & Pollard, R. Q. (2003). Mental health and deaf adults. In M. Marschark & P. E. Spencer (Eds.), *Deaf studies, language, and education* (pp. 203-215). New York, NY: Oxford University Press.

Leigh, I. W., & Stinson, M. S. (1991). Social environments, self-perceptions, and identity of hearing-impaired adolescents. *The Volta Review, 93* (5), 7–22.

Lejeune, B., & Demanez, L. (2006). Speech discrimination and intelligibility: Outcome of deaf children fitted with hearing aids or cochlear implants. *Belgian ENT, 2*, 63–68.

Lesar, I., & Vitulič, H.S. (2014). Deaf and hard-of-hearing students in Slovenia: academic achievement, experiences with schooling and professional aspirations. *Cypriot Journal of Educational Sciences. 9*(1), 29-39.

Lesar, I. (2012). Personality traits of deaf and hard of hearing students from regular and special schools in Slovenia. *Academic Journal, 24*(5), 97-98.

Lily Siong @ Mohamed, L. (2004). *Keberkesanan pengajaran dan pembelajaran dalam program pendidikan khas di politeknik Malaysia.* (Unpublished masters dissertation). Universiti Tun Hussein Onn, Malaysia.

Lindenberger, U., & Baltes, P. B. (1994). Sensory functioning and intelligence in old age: A strong connection. *Psychology and Aging, 9,* 339–355. doi: 10.1037/0882-7974.9.3.339

Lindfors, P., Berntsson, L., & Lundberg, U. (2006). Factor structure of Ryff´s psychological well-being scales in Swedish female and male white-collar workers. *Personality and Individual Differences, 40,*1213–1222.

Liu, P., Lei, L., & Zhang, X. F. (2004). Comparison Study of Missing Value Processing Methods. *Computer Science,* 31(*10*), 155–156

Lokman Ismail. (2007). *Beri peluang pada orang kurang upaya.* Utusan Malaysia. Retrieved on 08 Mei 2014 from http://utusan.com.my (dicapai pada 28 Julai 2007)

Long, K. M., Spears, R., & Manstead, A. S. R. (1994). The influence of personal and collective self-esteem on strategies of social differentiation. *British Journal of Social Psychology, 33* (3), 313-319. doi: 10.1111/j.2044-8309.1994.tb01028.x

Luciana, M. (2003). Practitioner review: Computerized assessment of neuropsychological function in children : Clinical and research applications of the Cambridge Neuropsychological Testing Automated Battery (CANTAB). *Journal of Child Psychology and Psychiatry, 44*(5), 649–663. doi: 10.1111/1469-7610.00152

Luhtanen, R., & Crocker, J. (1992). A collective self-esteem scale: Self-evaluation of one's social identity. *Personality and Social Psychology Bulletin, 18* (3), 302-318. doi: 10.1177/0146167292183006

Luhtanen, R., & Crocker, J. (1991). Self-esteem and intergroup comparisons: Toward a theory of collective self-esteem. In J. Suls & T. A. Wills (Eds.), *Social comparison: Contemporary theory and research* (pp. 211-234). Hillsdale, NJ: Erlbaum.

Lukomski, J. (2007). Deaf college students? Perceptions of their social-emotional adjustment. *Journal of Deaf Studies and Deaf Education*. *12* (4), 486-494. doi:10.1093/deafed/enm008

Luo, D., & Petrill, S. (1999). Elementary cognitive tasks and their roles in psychometric g. *Intelligence, 27* (2), 157-174. doi: 10.1016/S0160-2896(99)00020-3

Luo, X., Han, M., Liu, T., Chen, W., & Bai, F. (2012). *Assistive learning for hearing impaired college students using mixed reality: A pilot study*. 2012 International Conference on Virtual Reality and Visualization, 74–81. doi:10.1109/ICVRV.2012.20

Lyons, V., & Fitzgerald, M. (2004). Humor in autism and asperger syndrome. *Journal of Autism and Developmental Disorders*. *34* (5).

Lyubomirsky, S., & Lepper, H. S. (1999). A measure of subjective happiness: Preliminary reliability and construct validation. *Social Indicators Research*, *46,* 137–155. doi:10.1023/A:1006824100041

MacMillan, N. A., & Creelman, C. D. (1991). *Detection theory: A user's guide.* New York: Cambridge University Press.

Malaysia, (2017). *Disability action plan 2016 - 2022*. Putrajaya, Malaysia: Ministry of Women, Family and Community.

Malaysia, (2012). *Malaysia education blueprint 2013 - 2025*. Putrajaya, Malaysia: Ministry of Education.

Malaysia. (2002). *Knowledge-based economy master plan*, Kuala Lumpur, Institute of strategic and international studies (ISIS).

Malaysia. (2001a). *Eight Malaysia Plan 2001-2005,* Kuala Lumpur, National Printing Berhad.

Malaysia. (2001b). *The Third Outline Perspective Plan 2001-2010,* Kuala Lumpur, National Printing Berhad.

Maller, S. J., & Braden, J. P. (1993). The construct and criterion-related validity of the WISC-III with deaf adolescents. *Journal of Psychoeducational Assessment*, *11,* 105-113.

Mance, J., & Edwards, L. (2012). Deafness-related self-perceptions and psychological well-being in deaf adolescents with cochlear implants. *Cochlear Implants International 13*(2), 93–105. doi: 10.1179/1754762811Y.0000000017

Marschark, M., Kronenberger, W.G., Rosica, M., Georgianna, B., Carol, C., Durkin, A., & ...Schmitz, K.L. (2017). Social maturity and executive function among deaf learners. *Journal of Deaf Studies and Deaf Education*, *22*(1), 22-34.

Marschark, M., Sarchet, T., & Trani, A. (2016). Effects of hearing status and sign language use on working memory. *Journal of Deaf Studies and Deaf Education*, *21,* 148–155. doi:10.1093/ deafed/env070

Marschark, M., & Wauters, L. (2011). Cognitive functioning in deaf adults and children. In M. Marschark & P. E. Spencer (Eds.), *Oxford handbook of deaf studies, language, and education* (pp. 486–499). New York, NY: Oxford University Press.

Marschark, M. (2007). *Raising and educating a deaf child: A comprehensive guide to the choices, controversies and decisions faced by parents and educators (2nd ed).* New York: Oxford University Press.

Marschark, M. & Spencer, P. E. (2003). *Oxford handbook of deaf studies, language, and education,* New York: Oxford University Press.

Marschark, M., Lang, H.G., & Albertini, J.A. (2002). *Educating Deaf students: From research to practice*. Oxford: Oxford University Press.

Marshall, T.C., Lefringhausen, K., & Ferenczi, N. (2015). The Big Five, self-esteem, and narcissism as predictors of the topics people write about in Facebook status updates. *Personality and Individual Differences 85*, 35–40. doi: 10.1016/j.paid.2015.04.039

Mather, N., & Wendling, B. J. (2005). Linking cognitive assessment results to academic interventions for students with learning disabilities. In D. P. Flanagan & P. L. Harrison (Eds.), *Contemporary intellectual assessment: Theories, tests, and issues* (pp. 269-294). New York: Guilford Press.

Martin, D., Bat-Chava, Y., Lalwani, A., & Waltzman, S. (2010). Peer relationships of deaf children with cochlear implants: Predictors of peer entry and peer interaction success. *Journal of Deaf Studies and Deaf Education*, *16*, 108–120. doi:10.1093/deafed/enq037

Martin, D., & Bat-Chava, Y. (2003). Negotiating deaf-hearing friendships: Coping strategies of deaf boys and girls in mainstream schools. *Child: Care, Health & Development, 29*, 511–521. doi:10.1046/j.1365–2214. 2003.00371.x

Matthews, G., Zeidner, M., & Roberts, R. D. (2004). *Emotional intelligence: Science and myth.* Cambridge, MA: MIT Press.

Maxwell, M.D. (2001). *Acculturation and psychological well-being in deaf and hard-of-hearing people.* (Unpublished doctoral dissertation).The George Washington University.

Mayberry, R.I. (2002). Cognitive development in deaf children: The interface of language and perception in neuropsychology. In S. J. Segalowitz & I. Rapin (Eds.), *Handbook of neuropsychology*, (pp. 71–107). Philadelphia, PA: Elsevier.

Mayer, J.D., Salovey P. & Caruso, D.R. (2008) Emotional Intelligence: New ability or eclectic traits. *American Psychologist*, *63*(6), 503–517. doi: 10.1037/0003-066X.63.6.503

Mayer, J.D., & Geher, G. (1996). Emotional intelligence and the identification of emotion. *Intelligence, 22*, 89-113.

Mayer, J.D., Salovey P. & Caruso, D.R. (2004). Emotional intelligence: Theory, findings and implications. *Psychological Inquiry, 15*, 197-215.

McBrien, F. E. (1982). The social handicap of deafness. *The Journal of Laryngology and Otology, 96*(7), 577–83.

McCrae, R.R., & Costa, P.T. (1997). Personality Trait Structure as a Human Universal, *American psychologist, 52*(5), 509–516. doi:10.1037/0003-066X.52.5.509

McGrew, K.S. & Hessler, G.L. (1995). The relationship between the WJ-R Gf-Gc cognitive clusters and mathematics achievement across the life-span. *Journal of Psychoeducational Assessment, 13*, 21-38. doi: 10.1177/073428299501300102

Mead, G.H, (2009). *Mind, self, and society*. (1st ed.), USA: University of Chicago Press.

Mejstad, L., Heiling, K., & Svedin, C. G. (2009). Mental health and self-image among deaf and hard of hearing children. *American Annals of the Deaf, 153*, 504–515.

Mekonnen, M., Hannu, S., Elina, L., & Matti, K. (2016). The self-concept of deaf/hard-of-hearing and hearing students. *Journal of Deaf Studies and Deaf Education, 00*, 1-7. doi:10.1093/deafed/enw041

Meristo, M., & Hjelmquist, E., (2009). Executive functions and theory-of-mind among deaf children: Different routes to understanding other minds? *Journal of Cognition and Development,10* (1-2), 67-91.

Mesmer-Magnus1, J., & , Chockalingam Viswesvaran, S. D. & J. J. (2006). Social desirability : The role of over-claiming , self-esteem , and emotional intelligence major issues associated with socially desirable responding in high-stakes testing. *Psychological Science*, *48*(3), 336–356.

Meyer. J., & kashubeck-west, S. (2011). Psychological well-being in emerging adults who are deaf. In Zand, D.H and Pierce, K.J (Eds.), *Resilience in Deaf Children*. New York: Springer New York, 359-374.

Michaelson, J., Abdallah, S., Steuer, N., Thompson, S., & Marks, N. (2009). National accounts of well-being: Bringing real wealth onto the balance sheet. London: New Economics Foundation.

Mikolajczak, M., Roy, E., Verstrynge, V., & Luminet, O. (2009). An exploration of the moderating effect of trait emotional intelligence on memory and attention in neutral and stressful conditions. *British Journal of Psychology*. *100*(4), 699–715. doi:10.1348/000712608x395522

Miller, K. & Vernon, M. (2003). Deaf sex offenders in a prison population. *Journal of Deaf Studies and Deaf Education, 8*(3), 357-362. doi: 10.1093/deafed/eng011

Mitchell, T., & Quittner, A. L. (1996). Multi-method study of attention and behavioural problems in hearing-impaired children. *Journal of Clinical Child Psychology, 25*, 83-96. doi:10.1207/s15374424jccp2501_10

Miyamoto, R.H., Hishinuma., E.S, Nishimura., S.T, Nahulu., L.B, Andrade., N.N, Johnson RC, … Bell CK., (2001). Equivalencies regarding the measurement and constructs of self-esteem and major life events in an Asian/Pacific islander sample. *Culture Divers Ethnic Minor Psychology, 7* (2), 153-162.

Moschella, J.G. (1992). *The experience of growing up deaf or hard of hearing: Implications of sign language versus oral rearing on identity development and emotional well-being.* Unpublished doctoral dissertation. Antioch University/New England Graduate School.

Mohd Jamil, H.Y. (2006). Validity and reliability study of Rosenberg score and depressive symptoms among the post-surgery self-esteem scale in Seremban school children. *Malaysian Journal of Psychiatry, 15*(2), 35-39.

Mohd Rizal., M.S & Rosmawati., S. (2009). *Faktor-faktor yang mendorong orang kurang upaya (OKU) bekerja di JARO (Johor Area Rehabilitation Organization).* (Unpublished master dissertation). Universiti Teknologi Malaysia.

Moore, M. S., & Levitan, L. (1992). *For hearing people only*. Rochester: Deaf Life Press.

Mruk, C.J., (2006). *Self-esteem research, theory and practice*. (3rd ed). New York: Springer Publishing Company, Inc..

Mukari, S. Z., Vandort, S., Ahmad, K., Saim, L., & Mohamed, A. S. (1999). Parents' awareness and knowledge of the special needs of their hearing lmpaired child. *The Medical Journal of Malaysia, 4*(1), 87–95.

Mulcahy, R.T. (1998). *Cognitive self-appraisal of depression and self-concept: Measurement alternatives for evaluating affective states*. (Unpublished doctoral dissertation).Gallaudet University

Munoz-Bell, I. M., & Ruiz, M. T. (2000). Empowering the deaf. Let the deaf be deaf. *Journal of Epidemiological Community Health, 54,* 40–44.

Murray, C., & Greenberg, M. T. (2001). Relationships with teachers and bonds with school: Social emotional adjustment correlates for children with and without disabilities. *Psychology in the Schools, 38,* 25–41.

Mutalib, A. A., & Maarof, F. (2007). *Guidelines of Assistive Courseware (AC) for Hearing Impaired Students,* 186–191.

Najib, A.M., & Awanis, K.I. (2011). Towards healthy organisation in correctional setting: correctional officers' wellness, occupational stress and personality. *International Journal of Social Sciences and Humanity Studies, 3*(2), 355-365.

Nafiseh, A.G., Norlidah, A., Syar Meeze, M.R., & Mohd Yakub Zulkifli, M.Y. (2013). Mother's perspective toward Al-quran education for hearing impaired children in malaysia. *The Malaysian Online Journal of Educational Technology, 1* (4).

Nagoor Mera, A., Borhan, Y., & Rohani, H. (2010). *The determination of physical fitness profiles on malaysian deaf students.* (Research Project). Universiti Teknologi Mara

Nelson, K. (2005). Language pathways into the community of minds. In J. W. Astington & J. A. Baird (Eds.), *Why language matters for theory of mind* (pp. 266–297). New York: Oxford University Press

Nguyen, D. (2012). *Examining the role of job familiarity, cognitive ability, and emotional intelligence*. (Unpublished doctoral dissertation). Baylor University.

Noraini, M. S., Khalid, A., & Nor Aishah, B. (2001). Job opportunities for special needs population in Malaysia. *Jurnal Pendidikan*, *27*, 77-85.

Nor Ezdianie, O. (2007). *Kesejahteraan psikologi dan kesejateraan spiritual dalam kalangan pelajar IPTS di negeri Kelantan.* (Unpublished masters dissertation). Universiti Putra Malaysia

Norziha, M.M.Z., Halimah, B.Z., & Azlina, A. (2010b), *Developing augmented reality book for deaf in science: The determining factors.* Information Technology (ITSim), 2010 International Symposium in (Volume:1). doi:10.1109/ITSIM.2010.5561325

Nunnally, J.C. (1978). *Psychometric Theory*. (2nd ed). New York, USA : McGraw-Hill Book Company.

Nurul Aini, M. (2013). *Kesejahteraan psikologi dalam kalangan warga emas di rumah perlindungan orang tua di Selangor*. (Unpublished masters dissertation). Universiti Malaya, Malaysia

Nurul Hariza, H. (2012). *Aspirasi kerjaya dalam kalangan pelajar bermasalah pendengaran di politeknik*. (Unpublished masters dissertation). Universiti Tun Hussein Onn, Malaysia

Nur Tahrina, A. (2012). *IMSL: Interactive Malay sign language courseware for the deaf and hearing impaired*. (Unpublished masters dissertation). Universiti Utara Malaysia, Malaysia.

Oakes, P. J., Haslam, S. A., & Turner, J. C. (1994). *Stereotyping and social reality*. Oxford: Blackwell.

Obrzut, J. E., Maddock, G. J., & Lee, C. P. (1999). Determinants of self-concept in deaf and hard of hearing children. *Journal of Development and Physical Disabilities*, *11*, 237–251. doi: 10.1023/A:1021848632322.

Oliva, G. A., Lytle, L. R., Hopper, M., & Ostrove, J. M. (2016). From social periphery to social centrality: Building social capital for deaf and hard-of-hearing students in the 21st century. In M. Marschark, V. Lampropoulou, & E.

Skordilis (Eds.), *Diversity in deaf education* (pp. 325–354). New York, NY: Oxford University Press.

Owen, A.M., Morris, R.G., Sahakian, B.J., Polkey, C.E., & Robbins, T.W. (1996). Double dissociations of memory and executive functions in working memory tasks following frontal lobe excisions, temporal lobe excisions or amygdalo-hippocampectomy in man. *Brain, 119*(5), 1597–1615.

Owen, A.M., Sahakian, B.J., Semple, J., Polkey, C.E., & Robbins, T.W. (1995). Visuo-spatial short-term recognition memory and learning after temporal lobe excision, frontal lobe excision, or amygdalo-hippo-campectomy in man. *Neuropsychologia*, *33,* 1–24.

Owen, A. M., Downes, J. J., Sahakian, B. J., Polkey, C. E., & Robbins, T. W. (1990). Planning and spatial working memory following frontal lobe lesions in man. *Neuropsychologia*, *28,* 1021–1034.

Owens, T. J. (1994). Two dimensions of self-esteem: Reciprocal effects of positive self-worth and self- deprecation on adolescent problems. *American Sociological Review*, *59* (3), 391–407

Oyewumi, A., Akangbe, T., & Adigun, O. (2013). Personality factors as correlates of perceived quality of life among adolescents with hearing impairment in selected secondary schools in Lagos State , Nigeria. *Journal of Education and Practice*. *4*(9), 162-168.

Oyewumi, A. (2012). Analysis of emotional and behavioural disorder among primary school children with hearing impairment. *Nigerian Journal of Clinical and Counseling psychology, 18*.

Pablo, F.B., Cabello, R., Castillo, R., & Extremera, N. (2012). Gender differences in emotional intelligence : The mediating effect of age. *Behavioral Psychology / Psicología Conductual*. *20* (1), 77-89.

Palladino, C. D. (1990). *Developing self-esteem: Apositive guide for personal success.* California: Crisp Publication Inc.

Palmer, C. G. S., Boudreault, P., Baldwin, E. E., Fox, M., Deignan, J. L., Kobayashi, Y., & Sinsheimer, J. S. (2013). Deaf genetic testing and psychological well-being in deaf adults. Journal of Genetic Counseling, 22(4), 492–507.

Pallant, J. (2011). SPSS survival manual: A step by step guide to data analysis using SPSS. Crows Nest. New South Wales: Allen & Unwin.

Parasnis, I. (1998). Cultural and language diversity and the deaf experience. New York: Cambridge University Press

Park, H. M. (2008). *Estimating regression models for categorical dependent variables using SAS, STATA, LIMDEP and SPSS*. Technical Working Paper. The University Information Technology Services (UITS) Center for Statistical and Mathematical Computing, Indiana University.

Paul, P. V. (1998). *Literacy and deafness: The development of reading, writing, and literate thought*: Boston, MA: Allyn & Bacon.

Paul, P. V., & Jackson, D. W. (1993). *Toward a psychology of deafness: Theoreticaland empirical perspectives*. Boston: Allyn and Bacon.

Paulraj, M. P., Yaacob, S., Desa, H., Hema, C. R., Ridzuan, W. M., & Majid, W. A. (2008). E*xtraction of head and hand gesture features for recognition of sign language*. 2008 International Conference on Electronic Design, 1–6. doi:10.1109/ICED.2008.4786633)

Percy-Smith, L., Cayé-Thomasen, P., Gudman, M., Jensen, J. H., & Thomsen, J. (2008). Self-esteem and social well-being of children with cochlear implant compared to normal-hearing children. *International Journal of Pediatric Otorhinolaryngology*, *72* (7), 113–120.doi:10.1016/j.ijporl.2008.03.028

Petrides, K. V. & Furnham, A. (2000). On the dimensional structure of emotional intelligence. *Personality and Individual Differences, 29,* 313-320. doi.org/10.1016/S0191-8869(99)00195-6

Peterson, C. (2015). Empathy and theory of mind in deaf and hearing children. *Journal of Deaf Studies and Deaf Education, 3,* 1-7. doi: 10.1093/deafed/env05

Peterson, C. C., & Slaughter, V. P. (2006). Telling the story of theory of mind: Deaf and hearing children's narratives and mental state understanding. *British Journal of Developmental Psychology, 24,* 151–179. doi:10.1348/026151005X60022

Peterson, C. & Siegal, M. (2000). Insights into theory of mind from deafness and autism. *Mind and Language, 15* (1),123-145.doi: 10.1111/1468-0017.00126

Phillips J., Wiley S., Barnard H., & Meinzen-Derr J., (2014). Comparison of two nonverbal intelligence tests among children who are deaf or hard-of-hearing. *Research in Developmental Disabilities, 35* (2), 463-471. doi: 10.1016/j.ridd.2013.11.020

Polat, F. (2003). Factors affecting psychosocial adjustment of deaf students. *Journal of Deaf Studies and Deaf Education*, *8* (3), 325–339. doi:10.1093/deafed/eng018

Potthoff, J. G., Holahan, C. J., & Joiner, T. E., Jr. (1995). Reassurance seeking, stress generation, and depressive symptoms: An integrative model. *Journal of Personality and Social Psychology*, *68,* 664–670. doi:10.1037/0022-3514.68.4.664

Pourmohamadreza-tajrishi, M., & Ashori, M. (2013). The effectiveness of emotional intelligence training on the mental health of male deaf students. *Iranian Journal of Public Health, 42* (10), 1174–1180.

Premack, David, and Woodruff, G. (1978). Does the Chimpanzee have a theory of mind? *Behavioral and Brain Sciences, 1,* 515–526. doi: org/10.1017/S0140525X00076512

Prieto, J. L., & Muir, S. (2002). Successful students who are deaf in general education settings. *Communication disorders, 24* (1), 23-30. doi: 10.1177/152574010202400104

Pullmann, H., & Allik, J. (2000). The Rosenberg self-esteem scale: Its dimensionality, stability and personality correlates in Estonian. *Personality and Individual Differences, 28,* 701–715. doi:10.1016/ S0191-8869(99)00132-4.

Randal, C., Pratt, D., & Bucci, S. (2015). Mindfulness and self-esteem : A systematic review. *Springer Science, 6* (6), 1366-1378. doi:10.1007/s12671-015-0407-6

Reed, H., & Hindley, P.P. (1998). Promoting personal and social development. In: B. Brauer, A.L. Marcus & D.D. Morton (Eds) *Proceedings of the first world conference on mental health and deafness*. Washington DC: Gallaudet University.

Reis, H.T., Smith, S.M., Carmichael, C.L., Caprariello, P.A., Tsai, F.F,, Rodrigues, A., & Maniaci, M.R. (2010). Are you happy for me? How sharing positive events with others provides personal and interpersonal benefits. *Journal of Personality and Social Psychology*. *99,* 311-29. doi: 10.1037/a0018344

Rieffe, C. (2011). Awareness and regulation of emotions in deaf children. *British Journal of Developmental Psychology, 30,* 477-492.

Riggio, R. E. (1986). Assessment of basic social skills. *Journal of Personality and Social Psychology, 51,* 649-660.

Roberts, R. E. L., & Bengtson, V. L. (2014). Relationships with parents, self-esteem, and psychological relationships in young adulthood, *Social Psychology Quarterly, 56*(4), 263–277.

Roberts, R. D., Zeidner, M., & Matthews, G. (2001). Does emotional intelligence meet traditional standards for an intelligence? Some new data and conclusions. *Emotion, 1,* 196–231.

Robins, R. W., Hendin, H. M., & Trzesniewski, K. H. (2001). Measuring global self-esteem: Construct validation of a single-item measure and the Rosenberg self-esteem scale. *Social Psychology Bulletin, 27* (2), 151-161. doi:10.1177/0146167201272002

Robins, R. W., John, O. P., & Caspi, A. (1998). The typological approach to studying personality development. In Cairns, R. B., Bergman, L. & Kagan, J. (Eds.),

Method and Models for Studying The Individual (pp. 135–160). Thousand Oaks, CA: Sage.

Rogers, C. (1961). *On becoming a person*. Boston: Houghton Mifflin.

Rönnberg, J., Rudner, M., Foo, C., & Lunner, T., (2008). Cognition counts: A working memory system for ease of language understanding (ELU). *International Journal Audiology 47,* 171-177. doi:10.1080/14992020802301167

Rönnberg, J. (2003). Cognition in the hearing impaired and deaf as a bridge between signal and dialogue: A framework and a model. *International Journal of Audiology*, *42* (1), 68–76.

Rosenberg, M., Schooler, C., Schoenbach, C., & Rosenberg, F. (1995). Global self-esteem and specific self-esteem : Different concepts, different outcomes. *American Sociological Review, 60* (1), 141–156. doi: 10.2307/2096350

Rosenberg, M. (1989). *Society and the adolescent self-image* (ed.). Middletown, CT: Wesleyan University Press.

Rosenberg, M. (1986). *Conceiving the self.* Malabar, FL: Krieger.

Rosenberg, M. (1979). *Conceiving the self.* New York: Basic Books.

Rosenberg, M. (1965). *Society and the adolescent self-image.* Princeton, NJ: Princeton University Press.

Russell, E.W. (1995). The accuracy of automated and clinical detection of brain damage and lateralization in neuropsychology. *Neuropsychology Reviews*, *5*, 1–68. doi: 10.1007/BF02214929

Russell, E.W. (2000). The application of computerized scoring programs to neuropsychological assessment. In R.D. Vanderploeg (Ed.), *Clinician's guide to neuropsychological assessment (2nd ed)*. New Jersey: Lawrence ErlbaumAssociates.

Ryan, R. M. and Deci, E. L. (2000). The darker and brighter sides of human existence: Basic psychological needs as a unifying concept. *Psychological Inquiry*, *11*, 319–38. doi: 10.1207/S15327965PLI1104_03

Ryff, C. D. (1989a). Beyond Ponce de Leon and life satisfaction: New directions in quest of successful aging. *International Journal of Behavioral Development*, *12*, 35–55. doi: 10.1177/016502548901200102

Ryff, C. D. (1989b). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, *57* (6), 1069–1081.

Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology*, *69*, 719–727.

Ryff, C.D. & Singer, B. , (1996). Psychological well-being: Meaning, measurement, and implications for psychotherapy research. *Psychother Psychosom*. *65* (1), 14-23.

Ryff, C. D., & Singer, B. H. (Eds.). (2001). *Emotion, social relationships, and health.* New York, NY: Oxford University Press

Saadi. Z., Mehrabizade, M., Najjarian, B., Ahadi, H., & Asgari, P. (2010). Investigate the effectiveness of emotional intelligence training on decreasing aggression and increasing socio- individual adjustment in high school female students in Ahvaz City. *Journal of New Finding in Psychology, 12*, 137-49.

Sachdev, I., & Bourhis, R. Y. (1987). Status differentials and intergroup behaviour. *European Journal of Social Psychology*, *17*, 277-293.

Saenz, T. J. (2009). *An exploratory study of the relationship between emotional intelligence and IQ : Implications for students with learning diasbilities*. (Unpublished doctoral dissertation).Texas A&M University-Kingsville.

Safani, B., & Salleh, A. (2000). Halangan dan masalah yang dihadapi oleh pelajar berkeperluan khas dalam latihan kemahiran teknik dan vokasional. *Prosiding Seminar Pendidikan Kebangsaan 2000, Malaysia*

Sahakian, B. J., Morris. R. G., Evenden, J. L., Hcald, A., Levy, R., Philpot, M., & Robbins. T. W. (1988) A comparative study of visuospatial memory and learning in Alzheimer- type dementia and Parkinson's disease. *Brain*, *11*, 695-718. doi: 10.1093/ brain/111.3.695

Sahli, S., Arslan, U., & Belgin, E. (2009). Depressive emotioning in adolescents with cochlear implant and normal hearing. *International Journal of Pediatric Otorhinolaryngology*, *73*(12), 1774–1779. doi:10.1016/j.ijporl.2009.09.027

Sahli, S., & Belgin, E. (2006). Comparison of self-esteem level of adolescents with cochlear implant and normal hearing. *International Journal of Pediatric Otorhinolaryngology*, *70*(9), 1601–1608.

Salami, S. O. (2011). Personality and psychological well-being of adolescents : The moderating role of emotional intelligence. *Social Behavior And Personality An International Journal. 39* (6), 785–794. doi:10.2224/Sbp.2011.39.6.785

Salovey, P., Bedell, B. T., Detweiler, J. B., & Mayer, J. D. (2008). Emotional Intelligence. In *Handbook of emotions (3rd Ed.)* (pp. 533-543). New York, NY: Guilford Press.

Santos, P.J., & Maia, J. (2003). Confirmatory factor analysis and preliminary validation of a Portuguese version of the scale Rosenberg self-esteem. *Psychology: Theory, Research and Practice, 2,* 253-268.

Sardar, E. H., & Rusnani, A. K. (2012). Mothers' attitudes and self-esteem among deaf children in Iranian high schools. *Asian Social Science, 8*(2), 147–152. doi:10.5539/ass.v8n2p147

Schlesinger, H. S. (2000). A developmental model applied to problems of deafness. *Journal of Deaf Studies and Deaf Education*, *5*(4), 349–361. doi: 10.1093/deafed/5.4.349

Schutte, N.S., Malouff, J.M., Simunek, M., McKenley, J., & Hollander, S. (2002). Characteristic emotional intelligence and emotional well-being. *Cognition and Emotion, 16*, 769 – 786. doi: 10.1080/02699930143000482

Seal, C. R, & Andrews-Brown, A. (2010). An integrative model of emotional intelligence : Emotional Ability as a moderator of the mediated relationship of emotional quotient and emotional competence. *Organization Management Journal*. *7* (2), 143-152. doi: 10.1057/omj.2010.22.

Sekaran, U. (2003). Research method for business: a skill building approach (4th ed.). Singapore: John Wiley & Sons.

Sekaran, U., & Bougie, R. (2010). *Research methods for business: A skill building approach* (5th ed.). UK: John Wiley & Sons

Sevigny-Skyer, S. C. (1990). Personally speaking: A difference to be accepted. *Journal of Counseling and Development, 68*, 336–337. doi: 10.1002/j.1556-6676.1990.tb01386.x

Shahida, H., Chua, C.T., Rosadah, A.M., Zalizan, M.J., & Hamizatun Akmal, M.Y. (2012). The emotional intelligence development of pre-schoolers with hearing difficulties: Implications on parental involvement. *Akademika, 82* (2) 2012: 137-142.

Shahrul Arba'iah. O., Norzaini, A., & Manisah, M. A. (2008). *Faktor Ibu Bapa Dalam Kecemerlangan Akademik Pelajar Pekak* : Universiti Kebangsaan Malaysia Kajian Kes, *5*, 79–98.

Sharma, R.R. (2011). An empirical investigation into the role of EQ/emotional intelligence competencies in mental well-being. *The Journal of Business Perspective, 15* (2) 177–191. doi: 10.1177/097226291101500208

Shnekat, F. (2015). Emotional intelligence differences between the normal, the blind and the deaf in adolescence in a jordanian sample. *International Journal of Education, 7*(2), 392

Silvestre, N., Ramspott, A., Pareto, I. (2007). Conversational skills in a semistructured interview and self-concept in deaf students. *Journal of Deaf Studies and Deaf Education, 12* (1), 38–54.

Simon, M. (2010). *A study of emotional antecedents and reactions in deaf college students.* (Unpublished doctoral dissertation). Gallaudet University.

Siti Asmiza, M. (2004). *Kemampuan politeknik kementerian pendidikan Malaysia melaksanakan program pendidikan khas bagi pelajar cacat pendengaran (pekak) dalam program sijil dan diploma politeknik.* (Unpublished masters dissertation). Kolej Universiti Teknologi Tun Hussein Onn, Malaysia.

Siti Balqis. (2011). *Pengaruh kecerdasan dan emosi dan kesejahteraan psikologikal terhadap perkembangan diri kaunselor pelatih.* (Unpublished masters dissertation). Universiti Putra Malaysia, Malaysia.

Sahli, S., Arslan, U., & Belgin, E. (2009). Depressive emotioning in adolescents with cochlear implant and normal hearing. *International Journal of Pediatric Otorhinolaryngology*, *73*(12), 1774–1779. doi:10.1016/j.ijporl.2009.09.027

Sahli, S., Arslan, U., & Belgin, E. (2009). Depressive emotioning in adolescents with cochlear implant and normal hearing. *International Journal of Pediatric Otorhinolaryngology*, *73*(12), 1774–1779. doi:10.1016/j.ijporl.2009.09.027

Siti Sarawati, H.J., Ishak, M.S., & Zainudin, A.B. (2012). The impact of emotional intelligence towards relationship of personality and self-esteem at workplace. Procedia-Social and Behavioral Sciences, 65, 150–155. doi: 10.1016/j.sbspro.2012.11.104

Siti Suhaila, S., & Yahya, B. (2012). *Perception Among deaf students in malaysia higher education through workplace experiences.* 3rd International Conference On Business And Economic, (March), 1545–1556. R

Siti Zaharah, & Nor Azan, M. (2010). *Courseware accessibility for hearing impaired.* 2010 International Symposium on Information Technology, 1–5. doi:10.1109/ITSIM.2010.556132

Smelser, Neil J. (1989). Self-esteem and social problems: An introduction. *The Social Importance of Self-Esteem,* (Eds.) In M. Andrew, N. J. Smelser, & V. John. University of California Press

Smith, L.B., Quittner, A.L., Osberger, M.J., & Miyamoto, R. (1998). Audition and visual attention: the developmental trajectory in deaf and hearing populations. *Developmental Psychology*, 34(*5*): 840-850

Social Welfare Department. (2016). Statistik Orang Kurang Upaya. *Statistics on disabled person.* Retrieved 09 April, 2017 from http://www.jkm.gov.my/oku

Springer, K. W., & Hauser, R. M. (2006). An assessment of the construct validity of Ryff's scales of psychological well-being: Method, mode, and measurement effects. *Social Science Research, 35,* 1080–1102.

Stinson, M., & Kluwin, T. (1996). Social orientations toward deaf and hearing peers among deaf adolescents in local public high schools. In P. Higgins & J. Nash (Eds.), *Understanding deafness socially: Continuities in research and theories*. Springfield, IL: Charles C. Thomas, Publisher.

Stone, A. A., Schwartz, J. E., Neale, J. M., Shiffman, S., Marco, C. A., Hickcox, M., Paty, J., & ...Cruise, L. J. (1998). A comparison of coping assessed by ecological momentary assessment and retrospective recall. *Journal of Personality and Social Psychology, 74*, 1670-1680.

Surowiecki, V. N., Sarant, J., Maruff, P., Blamey, P. J., Busby, P. A, & Clark, G. M. (2002). Cognitive processing in children using cochlear implants: The relationship between visual memory, attention, executive functions and developing language skills. *The Annals of Otology, Rhinology & Laryngology. Supplement, 189*, 119–26.

Swets, J. A. (1996). *Signal detection theory and ROC analysis in psychology and diagnostics*: Collected papers. Mahwah, NJ: Erlbaum.

Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics,* (6th ed.). New Jersey: Pearson Education Inc.

Tajfel, H. (1981). *Human groups and social categories*. Cambridge, UK: Cambridge University Press.

Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. G. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33–48). Monterey, CA: Brooks-Cole.

Tamannaifar, M.R., Arfai, S., & Mohammad abadi, S. (2010). Correlation between emotional intelligence, self-concept and self-esteem with academic achievement. *Iranian Journal of Educational Strategies, 3*(3), 121–126.

Tambs, K. (2004). Moderate effects of hearing loss on mental health and subjective well-being: Results from the Nord-Trøndelag Hearing Loss Study. *Psychosomatic Medicine*, *66* (5), 776–82. doi:10.1097/01.psy.0000133328.03596.fb

Tan, H.W., & Gill, I. S. (2000). Malaysia. In I.S. Gill., F. Fluitman, & Amit Dar (Ed.), *Vocational education and training reform* (pp 218-260). New York, Oxford University Press.

Tayrose, M.P. (2011). *The developmental organization of cognitive abilities of deaf and hard of hearing (D/HOH) people as compared to those who are normal hearing.* (Unpublished doctoral dissertation).North Carolina State University Raleigh, North Carolina.

Tharpe, A.M., Ashmead, D.H., & Rothpletz, A.M. (2002). Visual attention in children with normal hearing, children with hearing aids, and children with cochlear implants. *Journal of Speech Language and Hearing Research, 45*, 403-413.doi:10.1044/1092-4388(2002/032)

Theunissen, SCPM., Rieffe, C., Netten, A.P., Briaire, J.J., Soede, W., Kouwenberg, M., & Frijns, J.F.M. (2014). Self-esteem in hearing-impaired children: The

influence of communication, education, and audiological characteristics. *PloS one, 9* (4), 94521. doi: 10.1371/journal.pone.0094521

Toppelberg, C.O., Medrano, L., Morgens, L.P. & Nieto-Castanon, A. (2002). Bilingual children referred for psychiatric services: Associations of language disorders, language skills, and psychopathology. *Journal of the American Academy of Child & Adolescent Psychiatry, 41(6),* 712-722.

Unsworth, N. & Engle, R.W. (2008). Speed and accuracy of accessing information in working memory: An individual differences investigation of focus switching. *Journal of Experimental Psychology: Learning, memory, and cognition, 34,* 616-630. doi: 10.1037/0278-7393.34.3.616

Uslu, M. (2013). Relationship between degrees of self-esteem and peer pressure in high school adolescents. *International Journal of Academic Research Part B, 5* (3),117-122. doi:10.7813/2075-4124.2013/5-3/B.19

Van Dierendonck, D. (2004). The construct validity of Ryff's scales of psychological well-being and its extension with spiritual well-being. *Personality and Individual Differences, 36,* 629–643. doi:10.1016/S0191-8869(03)00122-3

Van Gent, T., Goedhart, A. W., & Treffers, P. D. A. (2011). Self-concept and psychopathology in deaf adolescents: Preliminary support for moderating effects of deafness-related characteristics and peer problems. *Journal of Child Psychology and Psychiatry, and Allied Disciplines, 52*(6), 720–728.

Vutinuntakasame, S., Jaijongrak, V., & Thiemjarus, S. (2011). *An assistive body sensor network glove for speech and hearing-impaired disabilities.* 2011 International Conference on Body Sensor Networks, 7–12. doi:10.1109/BSN.2011.13

Wagner, J. (2009). How relational is self-evaluation? Self-esteem and social relationships across life span and family situations. (Unpublished doctoral dissertation). Friedrich-Alexander-University, Erlangen-Nurnberg.

Wallander, J.L., Schmitt M., & Koot H.M. (2001). Quality of life measurement in children and adolescents: Issues, instruments, and applications. *Journal of Clinical Psychology. 57* (4), 571–585.

Wallis, D., Musselman C., & MacKay S. (2004). Hearing mothers and their deaf children: the relationship between early, on going mode match and subsequent mental health functioning in adolescents. *Journal of Deaf Studies and Deaf Education 9,* 2–14. doi: 10.1093/deafed/enh014

Wauters, L., Bon, W. H. J., Tellings, A., & Leeuwe, J. F. J. (2006). In search of factors in deaf and hearing children's reading comprehension. *American Annals of the Deaf, 151* (3), 371-380.

Ward, T., Keenan, T., & Hudson, S. M. (2000). Understanding cognitive, affective, and intimacy deficits in sexual offenders. *A Developmental Perspective, Aggression and Violent Behavior, 5,* 41-62. doi:10.1016/S1359-1789(98)00025-1

Waterman, A. S. (1993). Two conceptions of happiness: Contrasts of personal expressiveness (eudaimonia) and hedonic enjoyment. *Journal of Personality and Social Psychology, 64*, 678–691. doi: 10.1037/0022-3514.64.4.678

Wechsler, D. (1991). *The Wechsler Intelligence Scale for Children* (3rd rev.). San Antonio, TX: The Psychological Corporation.

Wechsler, D. (2002). *The Wechsler primary and pre-school scale for intelligence* (3rd rev.). San Antonio, TX: The Psychological Corporation.

Wellman, H.M., Cross., & Watson, J. (2001). Meta-analysis of theory-of-mind development: The truth about false belief. *Child development*. *72* (3), 655-684.

Wells, I. (2010). *Psychological Well-Being (psychology of emotions, motivation and actions)*. New York: Nova Science Publishers, Inc.

WHO, (2017). *WHO global estimates on prevalence of hearing loss: Mortality and burden of diseases and prevention of blindness and deafness*. Retrieved 24 June, 2017, from http://www.who.int/pbd/deafness/estimates/en/

Wild, C.J., Yusuf, A., Wilson, D.E., Peelle, J.E., Davis, M.H., & Johnsrude, I.S. (2012). Effortful listening: The processing of degraded speech depends critically on attention. *Journal of Neuroscience. 32* (40), 14010-14021. doi: 10.1523/JNEUROSCI.1528-12.2012.

Wilkes, D.M., Tugcu, M., Hunter, J.E., & Noelle, D. (2005). Working memory and perception. *Proceedings of IEEE International Workshop on Robots and Human Interactive Communication.*

Woolfe, T. & Smith P.K (2006). The self-esteem and cohesion to family members of deaf children in relation to the hearing status of their parents and siblings. *Deafness & Education International, 3* (2), 80–96.

Wolters, N., Knoors, H., Cillessen, H.N., & Verhoeven, L. (2012). Impact of peer and teacher relations on deaf early adolescents' well-being: Comparisons before and after a major school transition. *Journal of Deaf Studies and Deaf Education*. *17* (4). doi: 10.1093/deafed/ens02

Yilmaz, H., Hamarta, E., Arslan, C., & Deniz, M.E., (2013). An investigation of loneliness, self-esteem and emotional intelligence skills in university students. *International journal of academic research, 5* (1), 205-209. doi: 10.7813/2075-4124.2013/5-1/B.31

Yu, C., & Smith, L.B. (2011). What you learn is what you see: Using eye movements to study infant cross-situational word learning. *Development Science, 14* (2), 165-180. doi: 10.1111/j.1467-7687.2010.00958.x

Zaidman-zait, A., Deirdre, C., Janet, R., J., Chia, R., & Kozak, F.K. (2017). Health-Related quality of life among young children with cochlear implants and developmental disabilities. *Ear and Hearing*, *38*(3), 1-10.

Zand, D. H., & Pierce, K. J. (Eds.). (2011). *Resilience in deaf children: Adaption through emerging adulthood.* New York: Springer.

Zamri, S., & Yahya, B. (2007). *Faktor-faktor yang mempengaruhi pembelajaran pelajar khas (cacat pendengaran) dalam mata pelajaran vokasional : Satu kajian kes di sekolah menengah pendidikan khas vokasional, seksyen 17, Shah Alam.* (Unpublished Bachelor's thesis). Universiti Teknologi Malaysia, Malaysia

Zeidner, M., Matthews, G., & Roberts, R. D. (2012). The emotional intelligence, health, and well-being nexus: What have we learned and what have we missed? *Applied Psychology: Health and Well-Being*, *4* (1), 1–30. doi:10.1111/j.1758-0854.2011.01062.x

Zeidner, M., Matthews, G., & Roberts, R.D. (2009). *What we know about emotional intelligence. How it affects learning, work, relationships, and our mental health*. Cambridge: MIT Press.

Zeigler-Hill, V. (2011). An implicit theory of self-esteem: The consequences of perceived self-esteem for romantic desirability. *Evolutionary Psychology, 9* (2), 147-180.

Zekveld, A. a, Deijen, J. B., Goverts, S. T., & Kramer, S. E. (2007). The relationship between nonverbal cognitive functions and hearing loss. *Journal of Speech, Language, and Hearing Research*, *50* (1), 74–82. doi:10.1044/1092-4388(2007/006)

Zekveld, A. A., George, E. L. J., Houtgast, T., & Kramer, S. E. (2013). Cognitive abilities relate to self-reported hearing disability. *Journal of Speech, Language, and Hearing Research ,* 56, 1364–1373. doi:10.1044/1092-4388(2013/12-0268)

Zhao, H., & Seibert, S. E. (2006). The big five personality dimensions and entrepreneurial status: A meta-analytical review. *Journal of Applied Psychology, 91*(2), 259–271. doi: 10.1037/0021-9010.91.2.259

Zulkiple Ibrahim. (June 2, 2011). Most handicapped people not yet registered with JKM. *Malaysian National News Agency (Bernama.com)*. Retrieved October 2, 2014, from http://www.bernama.com/bernama/

Zupančič, M., Sočan, G., & Kavčič, T. (2009). Consistency in adult reports on child personality over the pre school years. *European Journal of Developmental Psychology*, *6* (4) 455-480. doi: 10.2298/PSI1104295Z

APPENDICES

BORANG SOAL SELIDIK KAJIAN:
RELATIONSHIP BETWEEN COGNITIVE ABILITY, PERSONALITY, PSYCHOLOGICAL WELL-BEING AND SELF-ESTEEM AMONG HEARING-IMPAIRED STUDENTS: THE MODERATING ROLE OF EMOTIONAL INTELLIGENCE

Anda diminta menjawab **SEMUA** soalan dalam soal selidik ini. Segala maklumat yang diberikan anda adalah dirahsiakan dan hanya digunakan untuk tujuan kajian ini sahaja.

Apa yang penting ialah anda perlu menjawab kesemua soalan secara jujur dan ikhlas. Sila baca dengan teliti arahan dan soalan-soalan yang dikemukakan dalam soal selidik ini.

BAHAGIAN A : MAKLUMAT DIRI

Sila tandakan (/) di dalam kotak yang disediakan.

1. Jantina

1.	Lelaki	
2.	Perempuan	

2. Umur : _____(TAHUN)

3. Status pendengaran ibu/ bapa atau penjaga

1.	Normal	
2.	Seorang cacat pendengaran	
3.	Kedua-dua cacat pendengaran	

4. Status pendengaran adik beradik

1.	Normal	
2.	Seorang cacat pendengaran	
3.	Lebih dari seorang cacat pendengaran	

5. Adakah Ibu bapa atau Penjaga mengetahui bahasa isyarat?

1.	Ya	
2.	Tidak	

6. Pendapatan Keluarga?

1.	Kurang RM 1000	
2.	RM 1000 hingga RM3000	
3.	RM 3000 hingga RM5000	
4.	RM 5000 ke atas	

7. Tempat tinggal keluarga

1.	Bandar	
2.	Luar bandar	

8. Bilangan adik beradik : _____ orang

9. Cara ahli keluarga berkomunikasi dengan anda

1.	Lisan pertuturan "bahasa melayu" atau "Bahasa inggeris"	
2.	Isyarat 'Bahasa Isyarat Malaysia' (BIM) dan 'Kod Tangan Bahasa Melayu (KTBM)	
3.	Tulisan	

10. Adakah anda memakai alat bantuan pendengaran?

1.	Ya	
2.	Tidak	

Jika YA, nyatakan alat: _____

BAHAGIAN B

Sila tandakan (/) pada kotak pilihan anda

No	Item	Sangat Setuju	Setuju	Tidak Setuju	Sangat tidak setuju
		1	2	3	4
1.	Saya fikir saya seorang yang berguna, sama seperti orang lain.				
2.	Saya fikir diri saya mempunyai kebaikan.				
3.	Saya rasa saya seorang yang gagal.				
4.	Saya boleh melakukan sesuatu dengan baik sama seperti orang lain.				
5.	Saya fikir saya tidak mempunyai banyak perkara yang boleh dibanggakan (megah).				
6.	Saya menunjukkan sikap yang positif terhadap diri saya				
7.	Secara keseluruhannya saya berpuas hati dengan keadaan diri saya				
8.	Saya berharap saya akan lebih menghargai diri sendiri				
9.	Kadang-kala saya merasa saya tidak berguna.				
10	Kadang-kadang saya berfikir saya bukan orang yang baik.				

BAHAGIAN C

Tandakan jawapan yang paling tepat mengenai diri anda berdasarkan pilihan jawapan di bawah.

No	Item	TIDAK BENAR MENGENAI SAYA	JARANG-JARANG BENAR MENGENAI SAYA	KADANG-KADANG BENAR MENGENAI SAYA	SERINGKALI BENAR MENGENAI SAYA	BENAR MENGENAI SAYA
1.	Saya seorang yang gembira					
2.	Saya suka membantu orang lain					
3.	Saya tidak mampu beritahu idea saya kepada orang lain.					
4.	Saya ada masalah untuk jaga rasa marah					
5	Cara yang saya gunakan untuk atasi kesusahan ialah dengan selesaikan secara peringkat					
6	Saya tidak pernah melakukan perkara yang buruk dalam hidup saya					
7	Saya berasa yakin dengan diri saya dalam banyak keadaan.					
8	Saya tidak boleh faham perasaan orang lain					
9	Saya lebih suka orang lain membuat keputusan bagi pihak saya					
10	Paksaan dalam diri saya selalunya datangkan masalah					
11	Saya cuba melihat sesuatu perkara secara nyata tanpa bermimpi tentang perkara itu.					
12	Tidak ada perkara yang mengganggu saya.					

No	Item	TIDAK BENAR MENGENAI SAYA	JARANG-JARANG BENAR MENGENAI SAYA	KADANG-KADANG BENAR MENGENAI SAYA	SERINGKALI BENAR MENGENAI SAYA	BENAR MENGENAI SAYA
13	Saya percaya saya boleh berada dalam keadaan yang susah.					
14	Saya bijak memahami apa yang orang lain rasa.					
15	Adalah susah untuk saya faham perasaan saya sendiri.					
16	Saya rasa susah untuk jaga perasaan bimbang.					
17	Apabila berlaku keadaan yang susah, saya lebih suka kumpul maklumat yang banyak tentang keadaan itu.					
18	Saya tidak pernah bercakap bohong dalam hidup saya.					
19	Saya harap sesuatu yang baik dalam kebanyakkan perkara yang saya lakukan.					
20	Kawan-kawan saya boleh beritahu saya perkara rahsia tentang diri mereka					
21	Sejak beberapa tahun ini, pencapaian saya terlalu sedikit.					
22	Saya amat mudah marah.					
23	Saya lebih suka mendapatkan gambaran sesuatu masalah sebelum cuba selesaikan ia.					
24	Saya tidak pernah ikut apa-apa undang-undang pun.					

No	Item	TIDAK BENAR MENGENAI SAYA	JARANG-JARANG BENAR MENGENAI SAYA	KADANG-KADANG BENAR MENGENAI SAYA	SERINGKALI BENAR MENGENAI SAYA	BENAR MENGENAI SAYA
25	Saya mengambil berat tentang apa yang berlaku kepada orang lain.					
26	Susah untuk saya merasa kehidupan					
27	Saya susah membuat keputusan bersendirian.					
28	Saya ada paksa diri kuat yang susah dijaga.					
29	Bila ada masalah, perkara pertama yang saya lakukan ialah berfikir dahulu.					
30	Saya tidak pernah menghadapi hari-hari yang buruk.					
31	Saya berpuas hati dengan kehidupan saya.					
32	Perhubungan yang rapat penting kepada saya dan rakan-rakan saya.					
33	Susah untuk memberitahu perasaan dalaman saya.					
34	Saya seorang yang suka paksa orang lain.					
35	Apabila cuba untuk selesaikan masalah, saya melihat kepada semua faktor dan pilih cara yang paling baik.					
36	Saya tidak pernah dimalukan atas apa-apa yang telah saya lakukan.					
37	Saya selalu berasa tertekan/ stres					

No	Item	TIDAK BENAR MENGENAI SAYA	JARANG-JARANG BENAR	KADANG-KADANG BENAR	SERINGKALI BENAR	BENAR MENGENAI SAYA
38	Saya boleh menghormati orang lain.					
39	Saya lebih suka menjadi seorang pengikut daripada menjadi ketua.					
40	Saya seorang yang cepat marah.					
41	Dalam mengurus masalah yang timbul, saya cuba fikir banyak cara yang ada.					
42	Saya anggap sesuatu perkara akan habis dengan baik walaupun terdapat halangan dari masa ke semasa.					
43	Saya jaga perasaan orang lain					
44	Orang lain anggap saya kurang tegas.					
45	Saya seorang yang tidak sabar.					
46	Saya percaya dengan kebolehan saya urus masalah yang sedih.					
47	Saya ada hubungan yang baik dengan orang lain					
48	Susah untuk saya bayangkan perasaan saya					
49	Sebelum mula sesuatu yang baru, saya selalu rasa yang saya akan gagal.					
50	Susah untuk saya jaga hak-hak saya.					
51	Orang lain anggap yang saya adalah seorang yang suka bergaul.					

BAHAGIAN D

Tandakan jawapan di dalam kotak berikut.

No	Item	Sangat tidak setuju	Tidak Setuju	Sedikit Tidak setuju	Sedikit Setuju	Setuju	Sangat Setuju
1.	Saya tidak takut untuk beri idea walaupun idea saya berbeza dengan orang lain.						
2.	Saya berpendapat bahawa saya yang bertanggungjawab urus hidup saya.						
3.	Saya tidak minat dengan aktiviti yang pengaruh/ kuasai orang lain.						
4.	Kebanyakkan orang melihat saya sebagai seorang yang penyayang dan peramah/ mesra.						
5	Saya hidup seperti biasa dan tidak fikir sangat tentang masa depan.						
6	Apabila saya fikir perjalanan hidup yang lepas, saya bersyukur dengan apa yang telah saya dapat.						
7	Keputusan-keputusan saya tidak dipengaruhi oleh apa yang dibuat oleh orang lain.						
8	Keperluan hidup kadang-kadang menjatuhkan semangat saya.						
9	Pengalaman baru penting bagi membentuk diri berfikir tentang diri sendiri dan orang sekeliling.						
10	Mengekalkan hubungan rapat sesama manusia adalah sangat susah dan kecewa/ sedih bagi saya.						
11	Saya mempunyai arah tuju dan matlamat hidup.						
12	Secara umum, saya berasa yakin dan positif dengan diri sendiri.						

No	Item	Sangat tidak setuju	Tidak Setuju	Sedikit Tidak setuju	Sedikit Setuju	Setuju	Sangat Setuju
13	Saya mudah risau tentang apa orang fikir tentang saya.						
14	Saya tidak berapa mesra dengan orang ramai dan masyarakat di sekeliling saya.						
15	Apabila difikirkan semula, saya masih belum mencapai apa yang diingini.						
16	Saya selalu berasa sunyi kerana saya hanya ada beberapa orang kawan karib untuk kongsi masalah.						
17	Jadual harian saya selalu jadi tidak penting bagi saya.						
18	Saya rasa orang lain telah dapat apa yang mereka mahu tetapi saya belum dapat apa yang saya mahu.						
19	Saya selalu ikut orang yang mempunyai idea-idea yang bagus.						
20	Saya seorang yang agak cepat/bijak dalam selesaikan masalah kehidupan seharian saya.						
21	Saya rasa diri saya telah berubah ke arah kebaikkan masa ke semasa.						
22	Saya suka berbual dan bincang dengan semua ahli keluarga atau dengan rakan-rakan.						
23	Saya tidak ada semangat yang kuat untuk apa yang saya ingin capai.						
24	Saya suka banyak perkara dalam diri saya.						
25	Saya yakin dengan pendapat yang saya beri walaupun ia tidak sama dengan pendapat orang ramai.						

No	Item	Sangat tidak setuju	Tidak Setuju	Sedikit Tidak setuju	Sedikit Setuju	Setuju	Sangat Setuju
26.	Saya selalu berasa tertekan/ stres dengan tanggungjawab saya.						
27.	Saya tidak suka berada dalam keadaan baru yang menyebabkan saya kena ubah keadaan lama yang saya sudah selesa.						
28.	Orang ramai anggap saya ini seorang suka bantu dan sanggup berkongsi masa dengan orang lain.						
29	Saya suka rancang sesuatu untuk masa depan dan saya cuba membuatnya.						
30	Dalam banyak keadaan, saya berasa kecewa/sedih dengan kehidupan saya.						
31	Susah bagi saya untuk beri pendapat gosip semasa.						
32	Saya susah untuk uruskan kehidupan saya untuk capai kepuasan diri sendiri.						
33	Pada saya, kehidupan adalah suatu proses yang berterusan dari segi pembelajaran, perubahan dan peningkatan.						
34	Saya tidak ada pengalaman yang menarik dan tidak percaya hubungan dengan orang lain.						
35	Sesetengah orang hidup tiada arah tuju tetapi saya hidup ada arah tuju.						

No	Item	Sangat tidak setuju	Tidak Setuju	Sedikit Tidak setuju	Sedikit Setuju	Setuju	Sangat Setuju
36	Sikap saya mungkin tidak positif seperti yang orang lain anggap.						
37	Saya ikut apa yang saya fikir penting, tetapi bukan ikut pandangan yang orang lain beri.						
38	Saya telah berjaya bina kehidupan dan cara hidup ikut kemahuan diri sendiri.						
39	Suatu ketika dulu, saya telah putus asa dalam membuat perkara baru dalam hidup saya.						
40	Saya percaya kawan-kawan saya, dan kawan-kawan percaya saya.						
41	Kadang-kadang, saya rasa saya telah buat apa yang patut dalam hidup saya.						
42	Bila saya beza antara saya dengan kawan-kawan, saya rasa lebih senang/ selesa dengan diri sendiri.						

BAHAGIAN E

Sila tanda (/) pada kotak yang anda bersetuju dengan kenyataan-kenyataan di bawah.

No	Item	Sangat tidak setuju	Tidak Setuju	Sedikit Setuju	Setuju	Sangat Setuju
1.	Saya bukan seorang yang bimbang.					
2.	Saya suka dikelilingi orang ramai.					
3.	Saya tidak suka membuang masa dengan berangan-angan (mimpi) yang tidak penting.					
4.	Saya cuba bercakap dengan baik kepada orang yang saya jumpa.					
5	Saya menyimpan barang-barang saya dengan kemas.					
6	Selalu saya berasa rendah diri dengan orang lain.					
7	Saya mudah ketawa/ Suka.					
8	Apabila saya temui cara yang terbaik, saya akan sentiasa menggunakan cara tersebut.					
9	Selalu saya bergaduh dengan keluarga dan rakan kerja.					
10	Saya pandai dalam buat kerja hingga selesai ikut masa yang ditetapkan.					
11	Kadang-kadang saya rasa tidak selesa bila saya tertekan/ stress.					
12	Saya anggap diri saya sedih.					
13	Saya amat suka dengan lukisan/ hasil kerja dan keindahan alam.					
14	Sesetengah orang berpendapat saya seorang yang penting diri sendiri dan ego.					
15	Saya bukan orang yang ikut peraturan.					
16	Jarang saya rasa sunyi atau sedih					

BAHAGIAN E

Sila tanda (/) pada kotak yang anda bersetuju dengan kenyataan-kenyataan di bawah.

No	Item	Sangat tidak setuju	Tidak Setuju	Sedikit Setuju	Setuju	Sangat Setuju
17	Saya seronok berbual dengan orang ramai.					
18	Pelajar akan keliru kalau dengar ceramah yang diberi oleh orang yang ada banyak sikap kurang baik.					
19	Saya lebih selesa beri kerjasama dengan orang lain daripada bergaduh dengan mereka.					
20	Saya cuba buat semua kerja yang diberi dengan bersungguh- sungguh.					
21	Selalu saya berasa tertekan dan takut.					
22	Saya suka berada di tempat penuh mencabar/ lasak.					
23	Sajak/ puisi kurang mempengaruhi saya.					
24	Saya bersikap mengejek dan tidak pasti tujuan orang lain.					
25	Saya ada senarai matlamat yang jelas dan berusaha mencapainya ikut kepentingan.					
26	Kadangkala saya berasa diri tidak berharga langsung.					
27	Saya lebih suka buat sesuatu perkara secara sendirian.					
28	Selalu saya mencuba makanan baru dan lain.					
29	Saya percaya orang lain akan ambil kesempatan ke atas kita jika kita biarkan mereka.					
30	Saya banyak membuang masa sebelum membuat kerja.					

BAHAGIAN E

Sila tanda (/) pada kotak yang anda bersetuju dengan kenyataan-kenyataan di bawah.

No	Item	Sangat tidak setuju	Tidak Setuju	Sedikit Setuju	Setuju	Sangat Setuju
31	Jarang sekali saya berasa takut atau bimbang.					
32	Saya selalu rasa saya amat bertenaga.					
33	Saya jarang rasa sesuatu bila persekitaran berbeza.					
34	Kebanyakkan orang yang kenal saya suka saya.					
35	Saya bekerja keras untuk mencapai matlamat.					
36	Selalu saya marah dengan cara orang melayan saya.					
37	Saya seorang yang gembira dan bersemangat.					
38	Saya percaya kita perlu rujuk kepada pihak yang bertanggungjawab dalam hal agama dalam sebarang keputusan dan isu moral.					
39	Setengah orang berpendapat saya seorang yang tidak mesra dan terlalu berkira.					
40	Apabila saya ada tanggungjawab, saya boleh diharap untuk membuatnya hingga selesai.					
41	Selalu apabila tersilap, saya akan hilang semangat dan mudah berputus asa.					
42	Saya bukan orang yang mengharap sesuatu yang baik dalam sesuatu hal.					
43	Kadang-kadang apabila saya membaca sajak/ puisi atau melihat hasil kerja,saya akan rasa minat.					
44	Saya seorang yang degil dan bersemangat.					

BAHAGIAN E

Sila tanda (/) pada kotak yang anda bersetuju dengan kenyataan-kenyataan di bawah.

No	Item	Sangat tidak setuju	Tidak Setuju	Sedikit Setuju	Setuju	Sangat Setuju
45	Kadang-kadang saya bukan seorang yang boleh diberi kepercayaan.					
46	Saya jarang berasa sedih atau murung.					
47	Kehidupan saya berjalan dengan terlalu cepat.					
48	Saya tidak minat fikir alam semesta atau keadaan manusia.					
49	Secara umum, saya cuba ambil berat dan kasihan orang lain.					
50	Saya adalah seorang yang bijak siapkan tugas.					
51	Selalu saya rasa lemah dan mahu seseorang bantu saya selesaikan masalah saya.					
52	Saya seorang yang sangat kuat bermain/ sukan.					
53	Perasaan ingin tahu saya adalah tinggi.					
54	Jika saya tidak suka seseorang, saya akan beritahu orang itu.					
55	Saya bukan seorang yang teratur.					
56	Ada ketika saya berasa sangat malu hingga saya mahu sembunyi diri.					
57	Saya sedia ikut cara sendiri daripada memimpin orang lain.					
58	Selalu saya senang idea yang ada dalam fikiran saya.					
59	Saya bersedia pengaruhi orang lain untuk dapat apa yang saya mahu.					
60	Saya berusaha keras untuk cemerlang dalam semua perkara yang saya lakukan.					

Borang Persetujuan Bermaklum (Informed Consent)

1. Saya memahami bahawa tujuan kajian ini adalah untuk mengetahui apa yang pelajar cacat pendengaran berfikir tentang diri mereka. Maklumat ini akan membantu pihak pengurusan politeknik untuk tahu bagaimana untuk membantu pelajar menjadi lebih bahagia dan sihat.

2. Saya akan diminta untuk menjawab soalan-soalan di atas kertas dan permainan mengunakan komputer. Saya boleh membaca bahasa Malaysia, menjawab soalan-soalan dan menggunakan komputer. Saya tidak perlu menjawab soalan jika saya tidak mahu.

3. Soalan-soalan ini mungkin mengambil masa sehingga satu jam dan 30 minit masa saya.

4. Saya faham bahawa sekiranya saya mempunyai sebarang soalan, saya boleh bertanya kepada penyelidik. Saya faham saya boleh berhenti dan meninggalkan pada bila-bila masa. Nama penyelidik adalah Ummi Habibah binti Abd Rani dan dia boleh dihubungi di 019-7666304. Penyelidik adalah dari Universiti Utara Malaysia, Kedah.

5. Saya faham bahawa maklumat di sini adalah sulit (rahsia). Saya faham bahawa maklumat tentang latar belakang saya adalah untuk membantu penyelidik memahami jawapan saya dan tidak mengetahui siapa saya.

6. Menandatangani nama saya di atas kertas ini menunjukkan bahawa saya bersetuju dengan bebas untuk menjawab soalan-soalan ini.

7. Saya bersetuju untuk menyertai kajian ini.

_____ _____

(Tarikh) (Tandatangan)

PUSAT PENYELIDIKAN DAN INOVASI POLITEKNIK
JABATAN PENDIDIKAN POLITEKNIK
KEMENTERIAN PENDIDIKAN TINGGI
Jabatan Pendidikan Politeknik
Galeria PJH, Aras 3, Jalan P4W
Persiaran Perdana Presint 4, 62100 Putrajaya
Tel : 03-88919228 Fax : 03-88919322
Laman Web : http://politeknik.gov.my

POLITEKNIK
Jabatan Pengajian Politeknik

Ruj. Kami : KPT/JPP/PPP/700-1/1 Jld. 5(7)
Tarikh : 24 Mei 2016

UMMI HABIBAH BINTI ABDUL RANI
No. 5, Taman Palma,
Jalan Sintok UUM,
06010 Changlun,
Kedah

Puan,

KEBENARAN MENJALANKAN PENYELIDIKAN BERTAJUK *"RELATIONSHIP BETWEEN COGNITIVE ABILITY, PERSONALITY, PSYCHOLOGICAL WELL-BEING AND SELF ESTEEM AMONG HEARING-IMPAIRED STUDENTS: THE MODERATING ROLE OF EMOTIONAL INTELLIGENCE"*

Saya dengan hormatnya merujuk perkara di atas.

2. Sukacita dimaklumkan bahawa pihak kami tiada halangan untuk memberi kebenaran kepada puan untuk menjalankan kebenaran penyelidikan bertajuk ***"Relationship Between Cognitive Ability, Personality, Psychological Well-Being And Self Esteem Among Hearing-Impaired Students: The Moderating Role Of Emotional Intelligence"*** seperti yang dijelaskan dalam cadangan penyelidikan yang disertakan.

3. Sebarang pertanyaan lanjut berkenaan kajian penyelidikan yang akan dijalankan, sila hubungi Ketua Unit Penyelidikan Politeknik yang berkenaan untuk melancarkan lagi pelaksanaan kajian.

4. Untuk peringatan, puan hendaklah mengemukakan senaskah laporan akhir kajian tersebut ke Pusat Penyelidikan dan Inovasi Politeknik (PPIP), Jabatan Pendidikan Politeknik. Dimaklumkan juga bahawa puan, adalah diminta mendapatkan

kebenaran terlebih dahulu daripada PPnP sekiranya sebahagian atau sepenuhnya dapatan penyelidikan tersebut hendak dibentangkan di mana-mana persidangan atau seminar, atau untuk pengumuman di media massa.

Sekian untuk makluman dan tindakan seterusnya, terima kasih.

"BERKHIDMAT UNTUK NEGARA"

Saya yang menurut perintah,

(NORKAMAL BIN JAAFAR)
Ts.
Pengarah
Pusat Penyelidikan dan Inovasi Politeknik
Jabatan Pendidikan Politeknik

s.k.

1. Pengarah
   Politeknik Tuanku Syed Sirajuddin

2. Pengarah
   Politeknik Ungku Omar

3. Pengarah
   Politeknik Sultan Salahuddin Abdul Aziz Shah

4. Pengarah
   Politeknik Ibrahim Sultan

5. Pengarah
   Politeknik Kota Kinabalu

JABATAN KEBAJIKAN MASYARAKAT
Department of Social Welfare
Aras 6, 9-18, No.55 Persiaran Perdana,
Presint 4,
62100 PUTRAJAYA
MALAYSIA

Tel : 603-8323 1000
Faks (Fax) : 603-8323 2045
Laman Web *(Website)* : www.jkm.gov.my

Rujukan kami: JKMM 100/17/1/JLD.15 (31)
Tarikh: 26 Mei 2017

Ummi Habibah binti Abd Rani
Jabatan Psikologi dan Kaunseling
Kolej Sains dan Sastera
06010 Universiti Utara Malaysia
Sintok Kedah

Puan,

PERMOHONAN DATA ORANG KURANG UPAYA PENDENGARAN YANG MENDAFTAR DENGAN JABATAN KEBAJIKAN MASYARAKAT

Dengan hormatnya saya merujuk perkara tersebut di atas.

2. Bersama-sama ini disertakan maklumat berkenaan untuk kegunaan pihak puan. Puan diminta untuk menyerahkan dua (2) salinan laporan akhir kepada Jabatan ini selepas kajian tersebut selesai.

3. Sebarang maklumat lanjut, puan boleh menghubungi Bahagian Perancangan dan Pembangunan, Jabatan Kebajikan Masyarakat di talian **03-8323 1930** atau e-mel **noraidaibrahim@jkm.gov.my**.

Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"
"BERKAT BERJASA"

Saya yang menurut perintah

(FATIMAH ZURAIDAH BINTI SALLEH)
Pengarah Perancangan dan Pembangunan
b.p. Ketua Pengarah Kebajikan Masyarakat

No. telefon: 03-8323 1924
No. faks: 03-8323 2048
E-mel: timah@jkm.gov.my

Ummi Habibah binti Abd Rani
No 5 Jalan Sintok Taman Palma
06010 Changlun Kedah

Dr. Hasliza A. Rahim@ Samsuddin
Pensyarah Kanan,
Pusat Pengajian Kejuruteraan Sistem Elektrik
Universiti Malaysia Perlis
Kampus Pauh Putra
02600 Arau Perlis

Melalui,

Prof. Dr. Najib Bin Hj Ahmad Marzuki
Profesor
Sekolah Pembangunan Sosial
Kolej Sains Dan Sastera
Universiti Utara Malaysia,
Siutok 06010
Kedah

17 Januari 2016

Dr.

PERMOHONAN MENGGUNAKAN CANTAB *(CAMBRIDGE NEUROPSYCHOLOGICAL TEST AUTOMATED BATTERY) SYSTEM*

Merujuk kepada perkara di atas, adalah dimaklumkau saya **UMMI HABIBAH BINTI ABD RANI, No. Matrik 94062** merupakan pelajar PhD Psikologi di UUM. Saya ingin memohon kebenaran untuk menggunakan *CANTAB system* bagi tujuan menjalankan kajian bagi melengkapkan projek PhD dan maklumat lanjut adalah seperti berikut:

Nama	:	Ummi Habibah Binti Abd Rani
No. K/P	:	840913-08-6358
Program	:	Phd Psikologi
Tarikh Penggunaan	:	Januari 2016- Disember 2016
Tempat	:	Politeknik Tuanku Syed Sirajuddin, Arau Perlis
Email	:	ummihabibah1@yahoo.com
Tajuk Kajian	:	*Relationship Between Cognitive Ability, Personality, Psychological Well-Being and Self-Esteem Among Hearing-Impaired Students: The Moderating Role Of Emotional Intelligence*

2. Diharapkan permohonan ini akan dipertimbangkan oleh pihak Dr. Saya akan mematuhi peraturan yang telah ditetapkan dan akan bertanggungjawab terhadap segala kerosakkan yang berlaku. Bersama-sama ini disertakan pengesahan saya sebagai pelajar.

Perhatian dan kerjasama daripada pihak Dr amatlah dihargai.

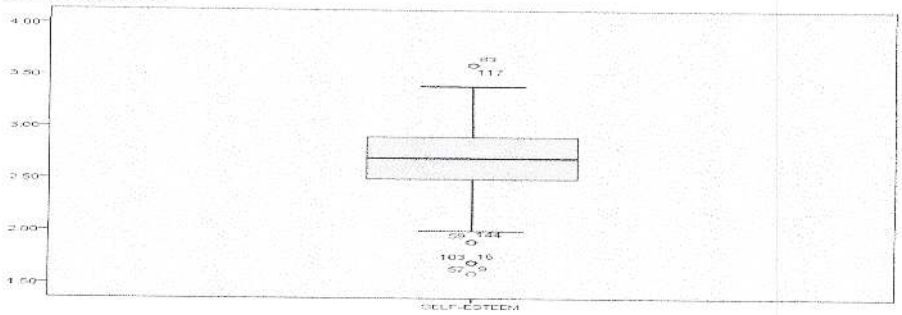
Sekian, terima kasih.

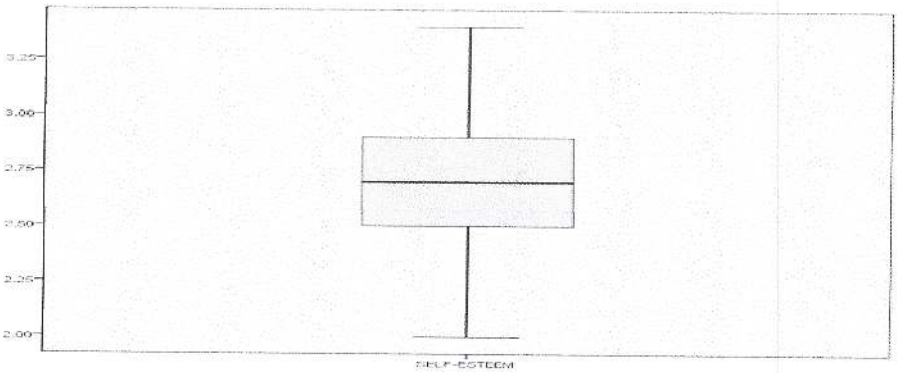
Yang benar,

.....
(UMMI HABIBAH BINTI ABD RANI)
Pelajar
PhD Psikologi
Uuiversiti Utara Malaysia

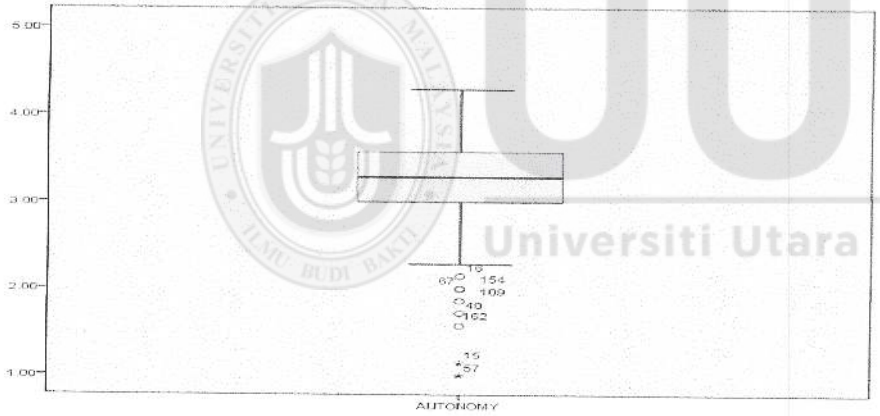
APPENDIX B

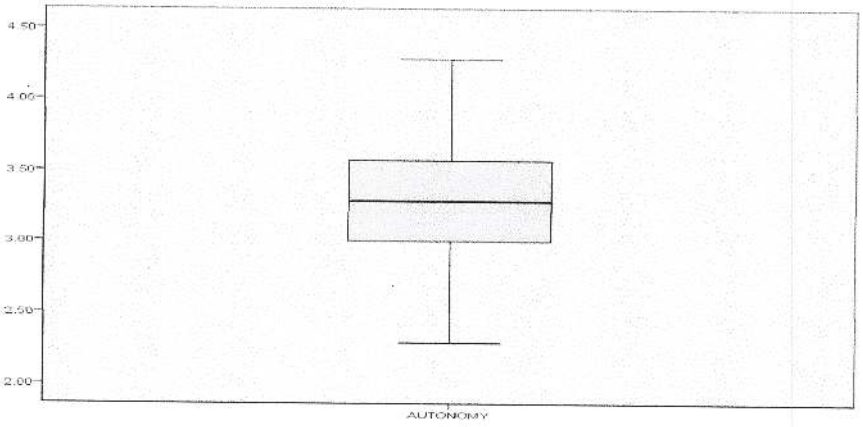
SELF-ESTEEM



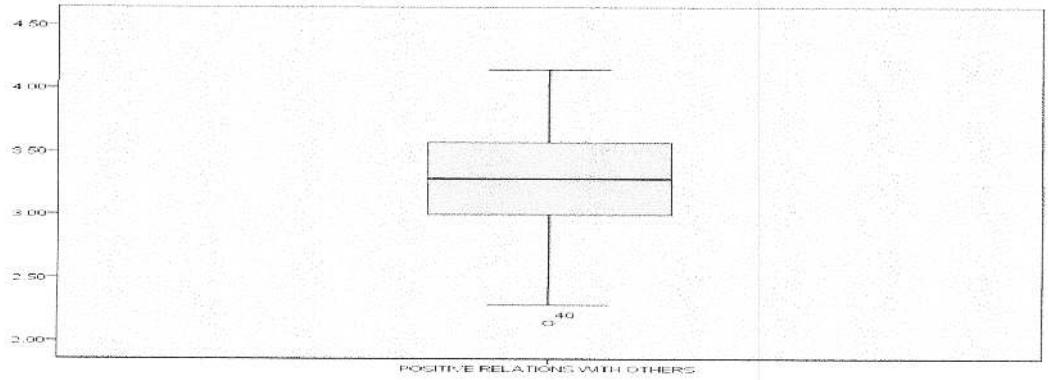


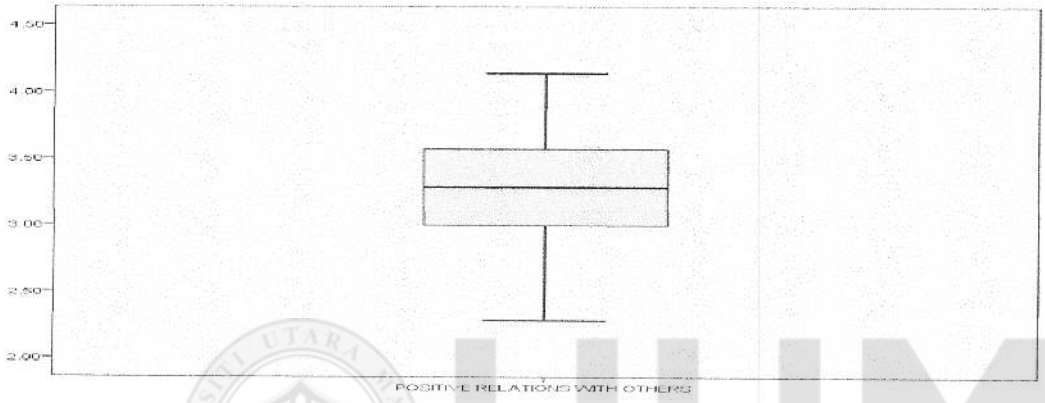
AUTONOMY



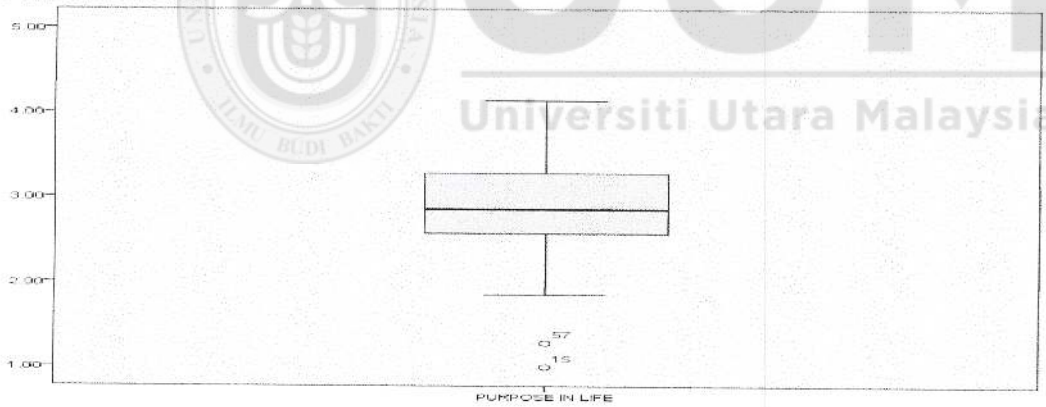


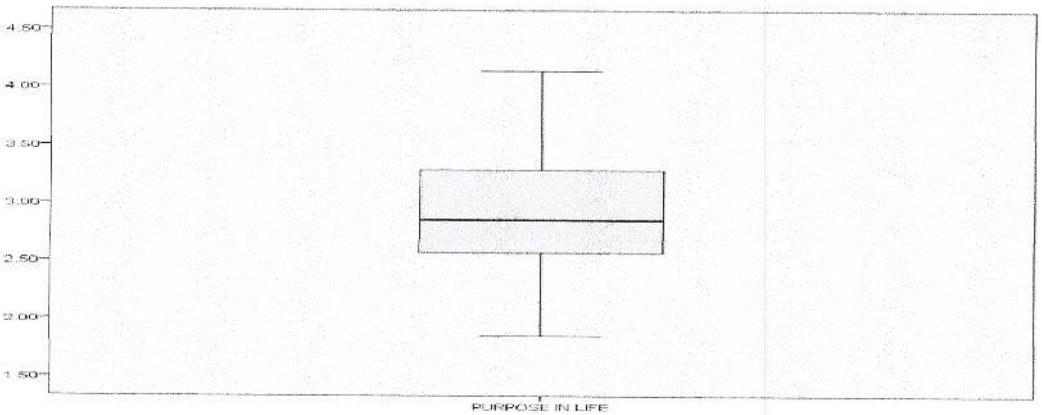
POSITIVE RELATIONS WITH OTHERS



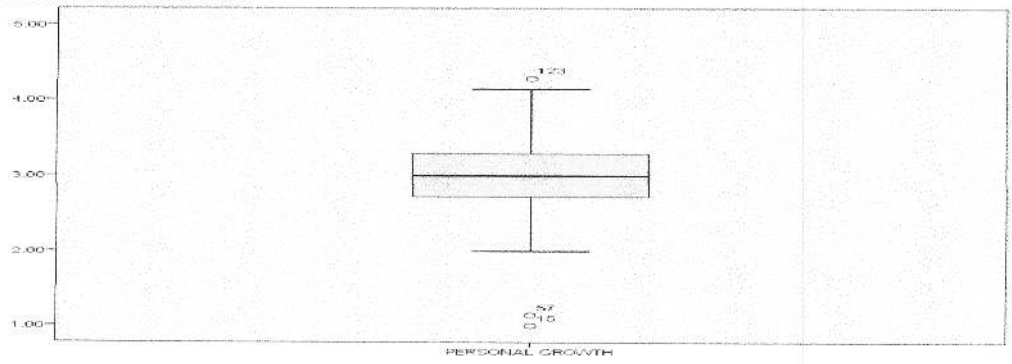


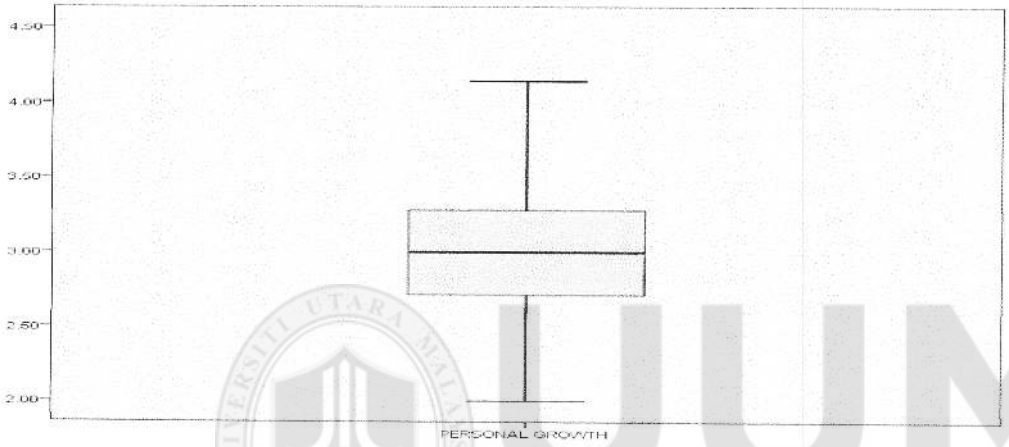
PURPOSE IN LIFE



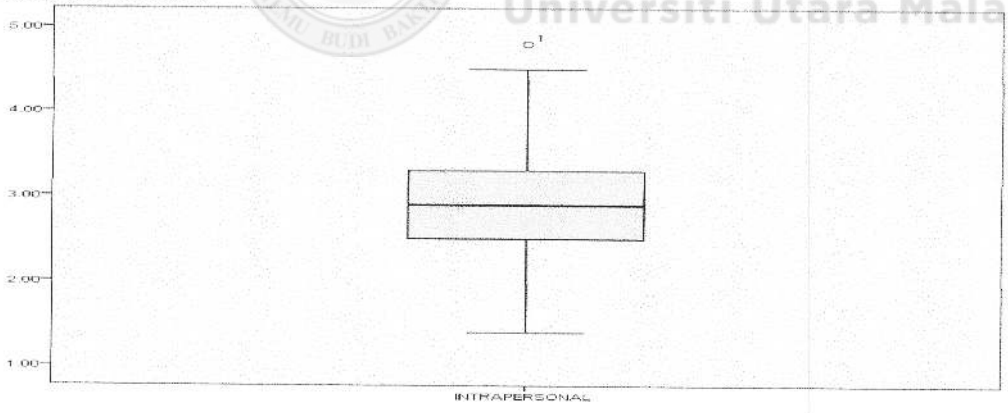


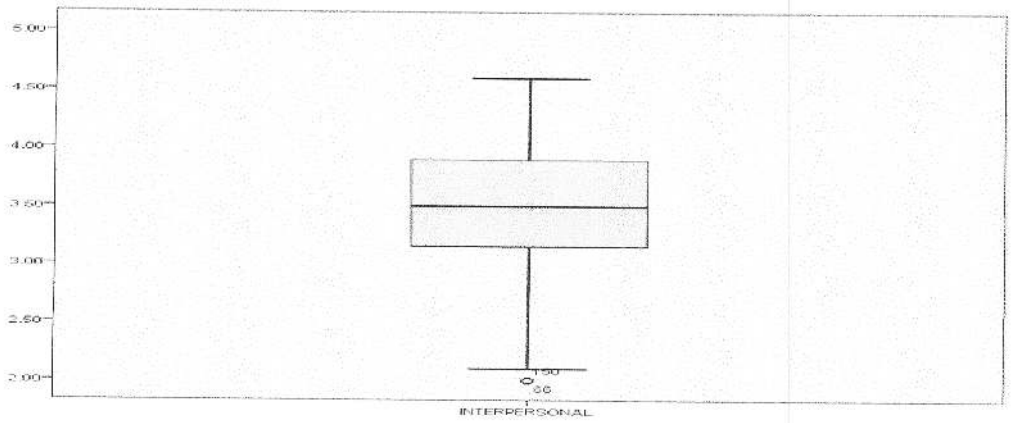
PERSONAL GROWTH



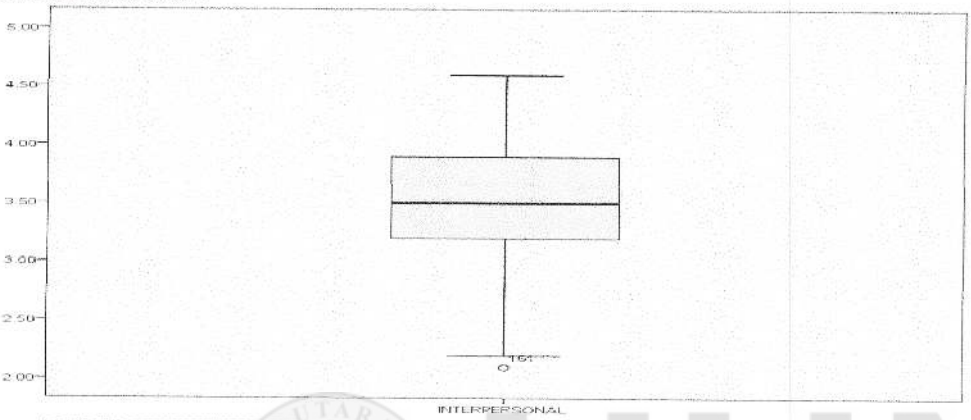


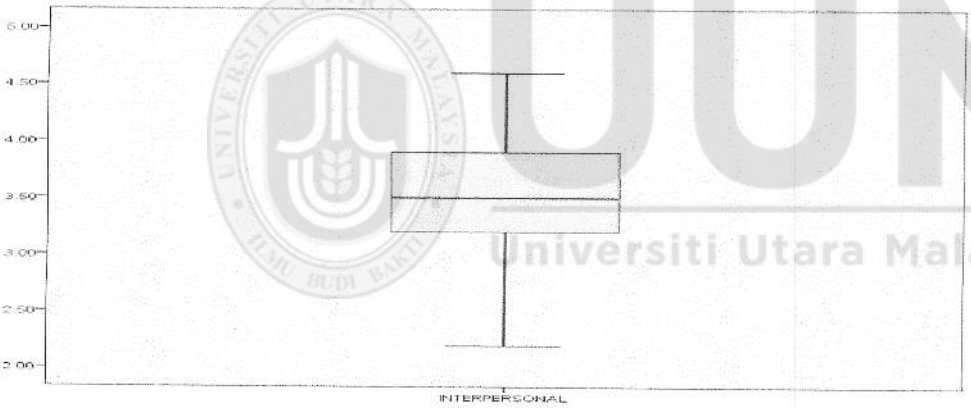
INTRAPERSONAL



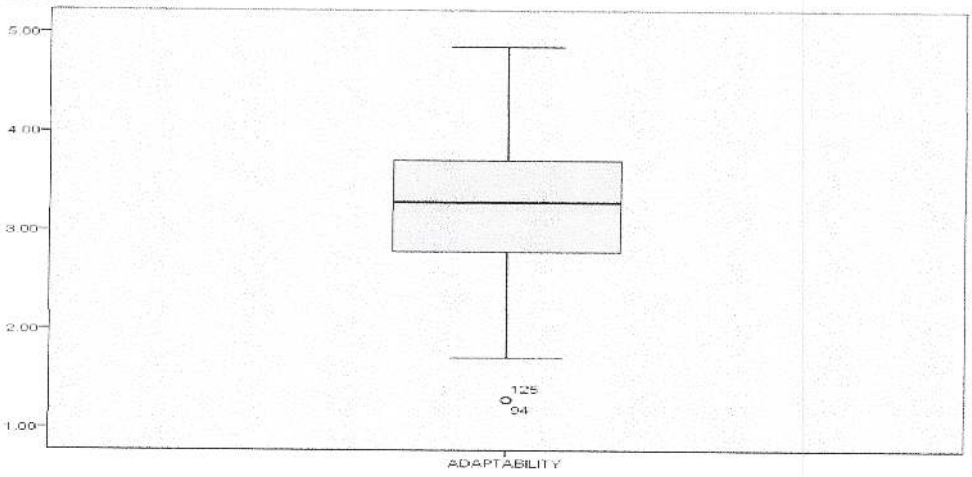


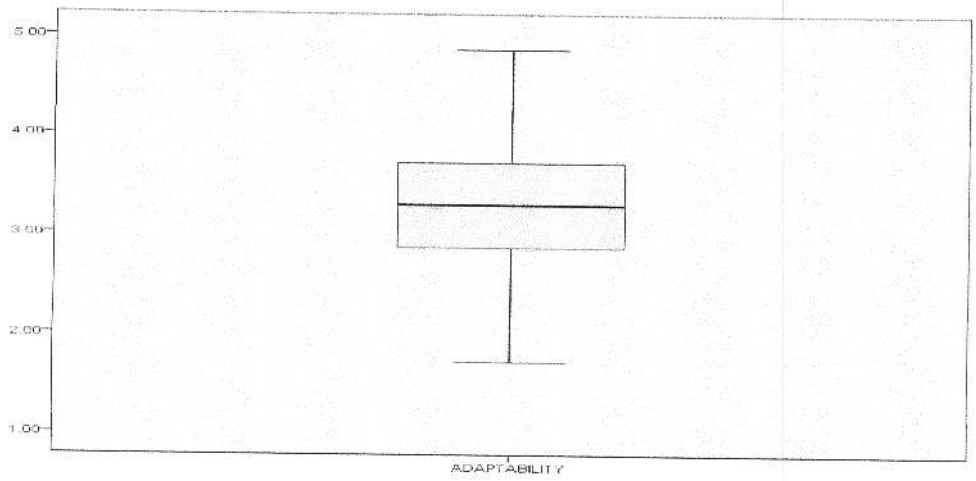
INTERPERSONAL



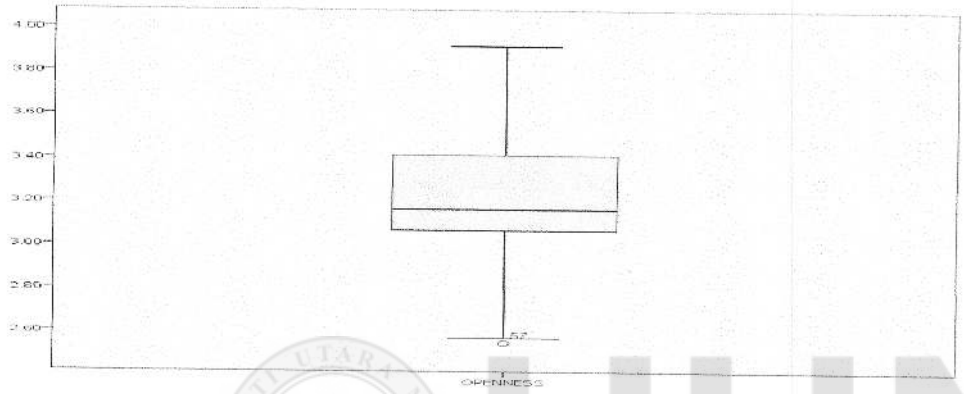


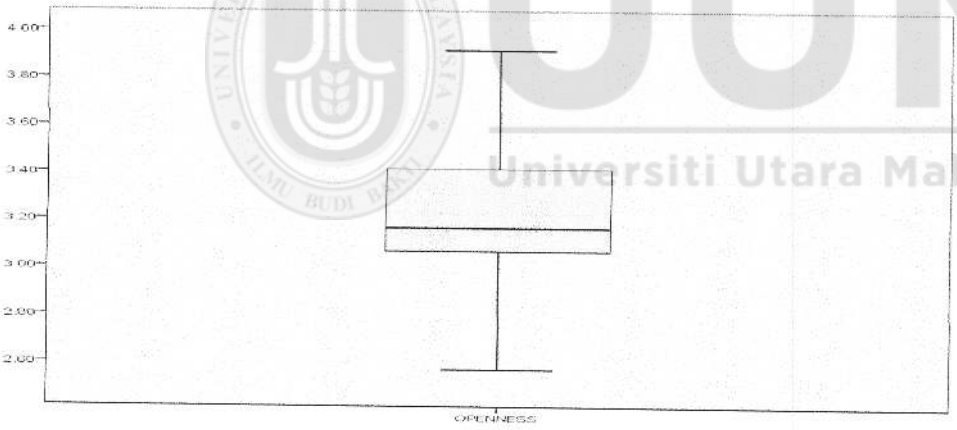
ADAPTABILITY





OPENNESS





AGREEABLENESS