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**THE RELATIONSHIP BETWEEN EMOTIONAL
INTELLIGENCE ON COGNITIVE ABILITY AND JOB
PERFORMANCE AMONG AGRICULTURAL EXTENSION
AGENT IN MALAYSIA AGRO-BASED INDUSTRY**



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**DOCTOR OF PHILOSOPHY
UNIVERSITI UTARA MALAYSIA
2024**

**THE RELATIONSHIP BETWEEN EMOTIONAL
INTELLIGENCE ON COGNITIVE ABILITY AND JOB
PERFORMANCE AMONG AGRICULTURAL EXTENSION
AGENT IN MALAYSIA AGRO-BASED INDUSTRY**



**A thesis submitted to the Ghazalie Shafie Graduate School of Government in
fulfilment of the requirement for the Doctor of Philosophy
Universiti Utara Malaysia**



Kolej Undang-Undang, Kerajaan dan Pengajian Antarabangsa
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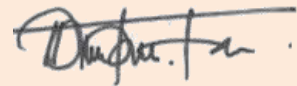
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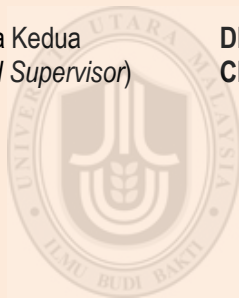
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ABSTRACT

Agricultural extension agents play a crucial role in providing effective and efficient extension services by acting as a liaison between government agencies and farmers. However, the application of Emotional intelligence (EI) (Self-awareness, Self-motivation, Self-regulation and Relationship Management) to measure job performance in agricultural extension agent is still relatively new and continue to debate whether EI has a substantial relationship on emotion, cognitive along with societal practices. Therefore, this study focused on Malaysia's Agro-based industries. First objective of the study is to investigate the effect of EI elements towards agriculture extension agents' job performance. Secondly, to examine the EI element towards agriculture extension agents' cognitive ability. Third, to examine the effect of cognitive ability on job performance among agriculture extension agents. The forth objective of the study is to investigate mediating role of cognitive ability on the relationship between EI element and job performance of agriculture extension agents. The study employed a descriptive quantitative analysis and CB-SEM analytic research utilising The Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and Wong Law Emotional Intelligence Scale (WLEIS). A total of 448 respondents from four Agro-based agencies in Malaysia were involved and resulted a significant correlation between elements of EI (self-regulation and relationship management) while other elements studied (self-awareness and self-motivation) did not found significance relationship between and the agricultural extension agents' job performance. Throughout this study, it revealed EI elements (self-awareness, self-motivation and self-regulation) except for relationship management have a direct relationship towards cognitive ability among agriculture extension agents. In addition, there is also a strong relationship between cognitive ability and job performance among agriculture extension agents. For the mediation test, cognitive ability was positively mediate the relationship between EI elements and agricultural extension agents' job performance except for relationship management. The findings theoretically support the application of EI approaches in task execution and information delivery, based on the Goleman Model. Practically, it is essential to use emotions precisely and according to different conditions to achieve the aims and objectives of public organizations. Therefore, EI should be aggressively used to raise awareness and maturity in the workplace for better performance.

Keywords: Emotional intelligence, Job performance, Cognitive bility, Agro-based industries, Agricultural extension agent.

ABSTRAK

Ejen pengembangan pertanian memainkan peranan penting dalam menyediakan perkhidmatan pengembangan yang berkesan dan cekap dengan bertindak sebagai penghubung antara agensi kerajaan dan petani. Walau bagaimanapun, aplikasi Kecerdasan Emosi (EI) (Kesedaran Kendiri, Motivasi Kendiri, Kawalselia Kendiri dan Pengurusan Perhubungan) dalam agen pengembangan pertanian masih agak baru dan terus memperdebatkan sama ada EI mempunyai hubungan terhadap emosi, kognitif bersama-sama dengan amalan masyarakat. Oleh itu, kajian ini tertumpu kepada industri Asas Tani Malaysia. Objektif pertama kajian adalah untuk menyiasat kesan elemen EI terhadap prestasi kerja ejen pengembangan pertanian. Kedua, mengkaji elemen EI terhadap keupayaan kognitif agen pengembangan pertanian. Ketiga, untuk mengkaji kesan keupayaan kognitif terhadap prestasi kerja di kalangan agen pengembangan pertanian. Objektif keempat kajian adalah untuk menyiasat peranan pengantara keupayaan kognitif terhadap hubungan antara elemen EI dan prestasi kerja ejen pengembangan pertanian. Kajian ini menggunakan analisis kuantitatif deskriptif dan penyelidikan analitik CB-SEM menggunakan The Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) dan Wong Law Emotional Intelligence Scale (WLEIS). Seramai 448 responden daripada empat agensi Asas Tani di Malaysia terlibat dan menghasilkan korelasi yang signifikan antara elemen EI (kawal selia sendiri dan pengurusan perhubungan) manakala elemen lain yang dikaji (kesedaran sendiri dan motivasi diri) tidak menemui hubungan yang signifikan. antara dan prestasi kerja ejen pengembangan pertanian. Sepanjang kajian ini, ia mendedahkan elemen EI (kesedaran sendiri, motivasi sendiri dan pengawalan sendiri) kecuali pengurusan perhubungan mempunyai hubungan langsung ke arah keupayaan kognitif dalam kalangan agen pengembangan pertanian. Selain itu, terdapat juga hubungan yang kuat antara keupayaan kognitif dan prestasi kerja dalam kalangan agen pengembangan pertanian. Bagi ujian pengantaraan, keupayaan kognitif adalah secara positif menjadi pengantara hubungan antara elemen EI dan prestasi kerja ejen pengembangan pertanian kecuali untuk pengurusan perhubungan. Penemuan secara teorinya menyokong aplikasi pendekatan EI dalam pelaksanaan tugas dan penyampaian maklumat, berdasarkan Model Goleman EI. Secara praktikal, adalah penting untuk menggunakan emosi dengan tepat dan mengikut keadaan yang berbeza untuk mencapai matlamat dan objektif organisasi awam. Oleh itu, EI harus digunakan secara agresif untuk meningkatkan kesedaran dan kematangan di tempat kerja untuk prestasi yang lebih baik.

Kata kunci: Kecerdasan Emosi, Prestasi Kerja, Keupayaan Kognitif, Industri Asas Tani, Agen Pengembangan Pertanian.

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TABLE OF CONTENTS

PERMISSION TO USE	i
ABSTRACT.....	ii
ABSTRAK.....	iii
ACKNOWLEDGEMENT	iv
TABLE OF CONTENTS	v
LIST OF TABLES	x
LIST OF FIGURES	xii
LIST OF APPENDICES	xiii
LIST OF ABBREVIATIONS	xiv
CHAPTER ONE INTRODUCTION.....	1
1.1 Background of Studies	1
1.2 Overview of Malaysia Agriculture Agencies.....	5
1.3 Agriculture Extension Agents' Job Performance.....	7
1.4 Problem Statement	9
1.5 Research Question.....	14
1.6 Research Objectives	15
1.7 Scope of Study	16
1.7.1 Level	16
1.7.2 Territory	18
1.7.3 Time	19
1.8 Significance of Study	20
1.8.1 Theoretical Contribution	20
1.8.2 Practical Contribution	21
1.8.2.1 Significance to the Malaysia Agro-based Industries	22
1.8.2.2 Significance to The Policy Makers.....	23
1.8.2.3 Significance to The Stakeholders and Government Agreement on Agro-Based Industry.....	24
1.9 Definition of key and terms.....	25
1.9.1 Job performance	25
1.9.2 Emotional intelligence	26
1.9.3 Self-awareness	27
1.9.4 Self-regulation.....	27

1.9.5 Self-motivation	28
1.9.6 Relationship management (social)	28
1.9.7 Cognitive ability	29
1.9.8 Agriculture Extension Agent	29
1.10 Summary	30
CHAPTER TWO LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK	31
2.1 Introduction	31
2.2 Job performance	32
2.3 Emotional Intelligence	34
2.3.1 Self-awareness	36
2.3.2 Self-regulation	41
2.3.3 Self-motivation	46
2.3.4 Relationship management	50
2.4 Cognitive ability	53
2.5 Emotional Intelligence and Agriculture Extension Agents' job performance	58
2.6 Cognitive Ability and Agriculture Extension Agents' Job Performance	64
2.7 Cognitive Ability role in Emotional Intelligence and Agriculture Extension Agents' Job Performance	67
2.8 Related Theories of the Studies	69
2.8.1 Goleman's Competency Paradigm	69
2.8.2 The Ability Model of Emotional Intelligence	72
2.8.3 The Trait Model of EI	74
2.8.4 General cognitive ability (GCA)	76
2.8.5 Cattell-Horn-Carroll (CHC) theory	77
2.8.6 Job Complexity	79
2.8.6.1 Table of Summary to Related Theories	80
2.9 Application of Daniel Goleman's Model in This Study	82
2.10 Conceptual Framework	87
2.11 Hypothesis of the studies	92
2.12 Summary	100
CHAPTER THREE RESEARCH METHODOLOGY	101
3.1 Introduction	101

3.2 Research Design.....	101
3.3 Unit/Level of Analysis	103
3.4 Sampling Framework.....	104
3.4.1 Population	106
3.4.2 Selection of Respondent	107
3.4.3 Sampling Technique	108
3.4.3.1 Determining sample size	109
3.4.4 Scales of Measurement	120
3.4.4.1 Nominal Scale.....	120
3.4.4.2 Ordinal Scale	121
3.4.4.3 Interval Scale	122
3.5 Operationalization	122
3.5.1 Agriculture Extension Agents' Job Performance.....	123
3.5.2 Emotional intelligence	124
3.5.2.1 Self-awareness	124
3.5.2.2 Self-motivation	125
3.5.2.3 Self-regulation	125
3.5.2.4 Relationship management.....	126
3.5.3 Cognitive Ability	127
3.6 Measurement of Items and Scales.....	128
3.7 Data Collection.....	138
3.7.1 Ethical Clearance	140
3.8 Data Analysis	140
3.8.1 Descriptive Analysis	141
3.8.2 Correlation	141
3.8.3 Regressions	142
3.8.4 Structural Equation Modelling (SEM).....	142
3.8.5 Reflective and Formative Measure	146
3.8.6 Pilot Study.....	148
3.9 Summary	153
CHAPTER FOUR DATA ANALYSIS	154
4.1 Introduction.....	154
4.2 Data Cleaning.....	154

4.3 Non-bias Assessment	157
4.4 Demographic Profile	158
4.5 Descriptive Statistics	161
4.6 Assumption Testing and Justification for Applying CB-SEM	163
4.6.1 Univariate Outliers.....	163
4.6.2 Multivariate Outliers.....	166
4.6.3 Assessment of the Data Normality and Multicollinearity.....	173
4.6.4 Confirmatory Factor Analysis (CFA)	177
4.6.5 CFA Model for Self-Regulation (SR).....	189
4.6.6 CFA Model for Relationship Management (RM).....	195
4.6.7 CFA Model for Cognitive Ability (CA)	201
4.6.8 CFA Model for Job Performance (JP)	206
4.7 The Measurement Model	211
4.7.1 Model Specification	211
4.8 The Structural Model	218
4.8.1 Model Specification	220
4.8.2 Model Estimation.....	223
4.8.3 Model Re-specification.....	225
4.9 Direct Effects of Constructs (Path Analysis)	227
4.10 Testing the Indirectional Effects among the Variables of the Study	230
4.10.1 Cognitive Ability mediates the relationship between Self-awareness and Job Performance	233
4.10.2 Cognitive Ability mediates the relationship between Self-motivation and Job Performance	233
4.10.3 Cognitive Ability mediates the relationship between Self-regulation and Job Performance	234
4.10.4 Cognitive Ability mediates the relationship between Relationship Management and Job Performance.....	234
4.11 Summary	236
CHAPTER FIVE DISCUSSION AND CONCLUSION	237
5.1 Introduction.....	237
5.2 Discussion on findings	237

5.2.1 To investigate the effect of EI (self-awareness, self-regulation, self-motivation and relationship management) towards agriculture extension agents' job performance in Malaysia Agro-based industries	237
5.2.2 To examine the EI (self-awareness, self-regulation, self-motivation and relationship management) towards agriculture extension agents' cognitive ability in Malaysia Agro-based industries	241
5.2.3 To examine the effect of cognitive ability on job performance among agriculture extension agents in the Malaysia agro-based industries.....	245
5.2.4 To investigate mediating role of cognitive ability on the relationship between EI (self-awareness, self-regulation, self-motivation and relationship management) and job performance of agriculture extension agents in the Malaysia agro-based industries.....	247
5.3 Research Contribution.....	250
5.4 Theoretical Implication	252
5.5 Practical Implication	254
5.6 Limitation of study.....	256
5.7 Recommendations for Future Research	257
5.8 Concluding Remarks.....	260
5.9 Summary	262
REFERENCES	264
APPENDICES	305

LIST OF TABLES

Table 2.1 Summary to related theories.....	80
Table 3.1 Sample of Population.....	106
Table 3.2 Kedah's State Agriculture Agencies.....	112
Table 3.3 Populations and sample size of the studies.....	118
Table 3.4 Proportion of sample size.....	119
Table 3.5 Sample Size for Each Stratum.....	119
Table 3.6 Operationalization of Agriculture Extension Agents' Job Performance.....	123
Table 3.7 Operationalization of EI dimension (self-awareness).....	124
Table 3.8 Operationalization of EI dimension (self-motivation).....	125
Table 3.9 Operationalization of EI dimension (self-regulation).....	126
Table 3.10 Operationalization of EI dimension (relationship management).....	126
Table 3.11 Operationalization of EI dimension (cognitive ability).....	127
Table 3.12 Concept of Measurement.....	129
Table 3.13 Summary of Comparison between CB-SEM and PLS-SEM.....	143
Table 3.14 Data Analysis On the Research Question (RQ) and Research Objective (RO).....	145
Table 3.15 Normality Test.....	150
Table 3.16 Indicators for Cronbach's Alpha.....	151
Table 3.17 Reliability Test.....	152
Table 4.1 Missing Data.....	156
Table 4.2 Independent Sample t-test Results for Non-Response Bias.....	158
Table 4.3 Demographic Profile.....	160
Table 4.4 Results of Descriptive Statistics for Variables.....	161
Table 4.5 Results of Univariate Outliers Based on the Standardized Values.....	163
Table 4.6 Multivariate Outlier Analysis.....	166
Table 4.7 Assessment of Normality and Multicollinearity for Measurement Model.....	174
Table 4.8 Summary of the Fit Indices of the CFA model of SA.....	180
Table 4.9 Results of Cronbach Alpha and Convergent Validity for SA of CFA Model.....	181
Table 4.10 Summary of the Fit Indices of the CFA model of SM.....	186

Table 4.11 Results of Cronbach Alpha and Convergent Validity for SM of CFA Model.....	187
Table 4.12 Summary of the Fit Indices of the CFA model of SR	191
Table 4.13 Results of Cronbach Alpha and Convergent Validity for SR of CFA Model	192
Table 4.14 Summary of The Fit Indices of The CFA Model of RM	197
Table 4.15 Results of Cronbach Alpha and Convergent Validity for RM of CFA Model.....	198
Table 4.16 Summary of The Fit Indices of The CFA Model of CA.....	202
Table 4.17 Results of Cronbach Alpha and Convergent Validity for CA of CFA Model.....	204
Table 4.18 Summary of The Fit Indices of The CFA Model of JP.....	208
Table 4.19 Results of Cronbach Alpha and Convergent Validity for JP of CFA Model	209
Table 4.20 Summary of the Fit Indices of the Measurement Model.....	215
Table 4.21 Summary of the AVE and the Squared Correlations of the Re-specified Measurement Model	218
Table 4.22 Research Hypotheses Codes and Descriptions.....	219
Table 4.23 Summary of the Fit Indices of the Structural Model.....	225
Table 4.24 Examining Results of Hypothesized Direct Effects of the Constructs...	227
Table 4.25 Results of Examining Mediation Effects of Cognitive Ability	232
Table 4.26 Summary of the Main Findings of the Study	235

LIST OF FIGURES

Figure 2.1 To Show the Relationship Between Emotional Intelligence and Job Performance with The Mediating Role of Cognitive Ability	97
Figure 3.1 Scope of sampling framework	105
Figure 3.2 Regions of Malaysia	110
Figure 3.3 Bartlett's Formula	117
Figure 4.1 The Hypothesized SA CFA Model	178
Figure 4.2 SA CFA Model	179
Figure 4.3 Revised CFA Model for SA	181
Figure 4.4 The Hypothesized SM CFA Model	184
Figure 4.5 SM CFA Model	185
Figure 4.6 Revised CFA Model for SM	187
Figure 4.7 The Hypothesized SR CFA Model	189
Figure 4.8 SR CFA Model	190
Figure 4.9 Revised CFA Model for SR	192
Figure 4.10 The Hypothesized RM CFA Model	195
Figure 4.11 RM CFA Model	196
Figure 4.12 Revised CFA Model for SM	198
Figure 4.13 The Hypothesized CA CFA Model	201
Figure 4.14 CA CFA Model	202
Figure 4.15 Revised CFA Model for CA	203
Figure 4.16 The Hypothesized JP CFA Model	206
Figure 4.17 JP CFA Model	207
Figure 4.18 Revised CFA Model for JP	209
Figure 4.19 Hypothesized Measurement Model	212
Figure 4.20 Generated Measurement Model	214
Figure 4.21 Re-specified Measurement Model	217
Figure 4.22 The Hypothesized Structural Model	222
Figure 4.23 The Generated Structural Model	224
Figure 4.24 The Re-specified Structural Model	226

LIST OF APPENDICES

Appendix A Figures Related to Pilot Testing.....	305
Appendix B Set of Questionnaire (English and Malay Version)	319
Appendix C Official Letters	335



LIST OF ABBREVIATIONS

EI	Emotional Intelligence
SA	Self-awareness
SM	Self-motivation
SR	Self-regulation
RM	Relationship management
CA	Cognitive Ability
JP	Job performance
PsyCap	Psychological Capital
DOA	Department of Agriculture
MADA	Muda Agricultural Development Authority
FAMA	Federal Agricultural Marketing Authority
MARDI	Malaysian Agricultural Research and Development Institute
DVS	Department of Veterinary Services
DOF	Department of Fisheries Malaysia
MAQIS	Malaysian Quarantine and Inspection Services Department
LPP	Farmers' Organization Authority
FDA	Fisheries Development Authority of Malaysia,
MPIB	Malaysian Pineapple Industry Board
KADA	Kemubu Agricultural Development Authority
MSCEIT	The Mayer-Salovey-Caruso Emotional Intelligence Test
WLEIS	Wong Law Emotional Intelligence Scale
GCA	general cognitive ability
CHC	Cattell-Horn-Carroll
GMA	General Mental Ability
SEA	Self Emotion Appraisal
OEA	Other Emotion Appraisal
SEM	Structural Equation Modeling
CB SEM	Covariance Based Structural Equation Modeling
CFA	Confirmatory Factor Analysis

SMC	Squared Multiple Correlations
CR	Composite Reliability
AVE	Average Variance Extracted



CHAPTER ONE

INTRODUCTION

1.1 Background of Studies

In today's world, organizational performance is one of the most important measures of how to develop in response to global competitiveness as the economy rapidly evolves and rivalry grows. As in this dynamic situation, the organization must successfully handle the transition occurred. Emotional intelligence is critical in job performance because it enables management and employees to deal with this difficult transformation.

In the context of job performance, Viswesvaran (2000) suggested job performance as a scalable engagements, attitudes and results that workers participate in or accomplish. It is directly related towards both organisational achievements. Whereas it has stimulated the interest of researchers and practitioners alike having a significant influence on results impacting the bottom line of organizations (Alessandri, Borgogni, & Latham, 2017). Alessandri et al. (2017) further emphasised the link between job performance and organizational performance, claiming that "questions relating to the nature and relevance of their relationship has captivated organizational scholars from the inception of this field." The reason for this is because in order to assess an employee's performance on the job, the supervisor must give the description of criteria on employee's behaviour in order to meet organizational goals.

Apart from that, job performance is a fundamental component of the majority of improvement initiatives which making it a foundational aspect of organizational practise and research (Scullen, 2000). It can be in a form of merit-based pay, promotion

and retention of workers. The final measured act as a ruler to determine those rate for each employee in an organization. This is because an employee deserves to be rewarded on what he has contributed in the organization.

The capability to convey and control feelings in order to recognize and wisely respond towards the emotional states of others is vital. Think about a situation in which people were unable to tell when a friend was unhappy or whether a coworker was angry. It has brought a term of emotional intelligence (EI) into a studies whereby it was defined by (Peter, Salovey & Mayer, 1990) as "the ability to monitor one's own and others' feelings and emotions, to discriminate among them, and to use this information to guide one's thinking and actions".

EI was also prescribed the ability to comprehend one's own and other thoughts in order to drive oneself and to better handle emotions in a relationship (Poon, 2002). This statement can be understood by a stable emotion of an individual will effected a positive and rapid positive progress in any relationship especially at workplace. It is crucial to have a control of the emotion in order to achieve goals set up by an organization as it plays a role and the ability to conduct work in a professional way.

Throughout this research, it was tried to explore the idea which a person who are emotionally intelligent is able to work together as team which will a resulting that everyone they encounter is also in a higher esteem and will values each other (Hogan & Bickle, 2018). That is because the employees that are emotionally intelligent have a more optimistic perspective, pleased, committed, and devoted to the profession and organization. These will promote a favourable climate which resulting a higher job performance (Miao, Chao, Humphrey & Qian, 2017).

Furthermore, there are four main components of EI which are self-awareness, self-regulation, self-motivation as well as relationship-management (Goleman, 2000). These dimensions will be measured thoroughly to distinguish the level of performance of the individual itself. That is because the dimensions mentioned is the prior contribution to the successful or failures of the job performance to an individual.

Meanwhile, the linkage between cognitive ability and job performance has been evaluated by several sizable meta-analytic studies (Kato & Scherbaum, 2023; Sackett et al., 2022; Schmidt & Hunter, 1998). Some have come to the conclusion that cognitive ability is needed to predict work success due to the mounting evidence that cognitive ability is an efficient predictor and the relative paucity of data supporting the usefulness of additional specific characteristics (Kell & Lang, 2018; Nye et al., 2020).

As to be clear, cognitive ability is the capacity for reasoning, planning, problem-solving, theoretical thought, grasping complex ideas, quick learning, and experience-based knowledge acquisition (Gottfredson, 1997). Two competing theories dominated initial studies on the psychometric characteristics of cognitive ability whereby the two-factor model of intelligence (Spearman, 1904), which stressed the importance of a latent general factor (g), and the model of primary mental abilities (Thurstone, 1938), accentuated the standing for more specific aspects.

However, Burcea and Sabie (2020) made noticed of how intricate the idea is and how challenging it is to measure emotional intelligence. Khoreva and Wechtler (2018) mentioned that employee with high performances among respondents would resulted to the case company's solid reputation, corporate policy, and relatively higher compensation compared to comparable companies in the market, rather than the

application of multiple dimensions of HRM and high employee well-being. The researchers suggested that future studies should look at the linkages in issue in other sector and industry contexts.

Agriculture extension agents serve as a liaison between government agencies and farmers, enabling communication and policy implementation (Musa et al., 2019). Extension planning and training can incorporate all levels of extension because this coordination of agencies and engagement enables swift responses to the needs created by expansion (Yusuf et al., 2021). The efficiency of extension services was also strongly depended on qualified extension agents who understood and were proficient in their jobs (Saifan et al., 2021). They were in charge of relaying information to farmers during the extension process. Extension services were formed across the world based on diverse concepts, and in certain countries, extension initiatives were utilised to carry official directions to rural regions (Pakri et al., 2022).

Above all, emotional intelligence was assumed to be interrelated with job performance as the cognitive ability could be the mediator to predict the performances as an effort to close the gap. It was also as an effort to address the issue in this area. In which the researcher chooses to adopt a broad view and build a framework commencing the components to model elements that have a substantial impact on job performance. In addition, it does not limit itself to choosing minute and precise settings with their variables (Pandey, 2019).

Hence, the importance of carrying out this research was to assess how the emotional intelligence of employees reflects their job performance when cognitive ability act as the mediator. This paper intended to fill this gap by observing on four (4) factors of

emotional intelligence which are self-awareness, self-motivation, self-regulation and relationship management. This research was therefore exploring the linking between emotional intelligence on agricultural extension agents' job performance using the mediating effect of cognitive ability.

1.2 Overview of Malaysia Agriculture Agencies

In 1905, the Department of Agriculture was founded (DOA, 2022). The Department of Agriculture's principal function at the time was to implement the government's agricultural policy. With the establishment of the “*Federal Agricultural Marketing Board (FAMA) (1965), the Agricultural Research and Development Institute (MARDI) (1970), and the Board of Farmers' Organizations (LPP) (1973)*”, the Department of Agriculture started concentrating on its goal of offering development services, especially to farmers. To boost productivity and revenue while guaranteeing the availability of enough, safe, and high-quality food, the agencies must transfer technology based on Good Agricultural Practices throughout the value chain to provide agricultural development and expansion services (DOA, 2022).

In addition to employing about 10% of the labor force, agriculture, fishing, and forestry in Malaysia account for 8% of the country's GDP (ITA, 2022). Particularly in the area of palm oil, Malaysia has very strong agricultural research capacity and an efficient extension infrastructure.

The agriculture extension agents is known as the advisory services in agriculture (Syngenta, 2022). Agricultural extension can be a key player in helping farmers overcome informational barriers and promote the adoption of more advanced agricultural technologies, resulting in increased agricultural output and income

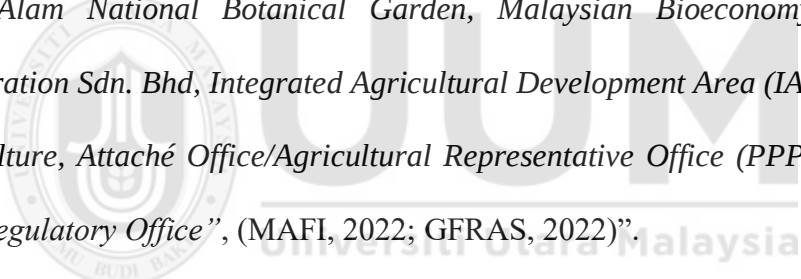
(Birkhaeuser, Evenson & Feder, 1991; Picclotto & Anderson, 1997; Feder, Willet, & Zijp, 1999; Anderson & Feder, 2007; Davis, 2008; Birner et al., 2009; Waddington & White, 2014).

In addition, farmers can't really alter their farming practices on their own. Therefore, they require outside assistance, either directly in the form of mentoring and business coaching or indirectly in the form of intensives that can encourage farmers to accept new things and consider changes, (Marliati et al, 2008). It is where the agricultural extension is one part of government bureaucracy that deals with farmers directly (Zainal & Prakaso, 2019).

At both the field and administrative levels, extension agents are constantly interacting with a complex and diverse range of personalities and background (Rohit et.al, 2017). It's indeed pertinent that individuals be given space to evolve and use their social-emotional skills. This is because a crucial part of the agricultural sector is played by agricultural agents Victor and Anilkumar (2019) who facilitate communication and function as a liaison between farmers and researchers, assisting farmers in making decisions.

Moreover, the extension agents also had been mentioned in Malaysia 12th Plan where the workforce's abilities and skills will be improved to allow all economic sectors to advance along the value chain (EPU, 2022). In order to develop qualified and highly knowledgeable agriculturists who can fulfil both the present and future demand, the training curriculum and modules will be evaluated in the agriculture sector. The formation of a professional body to acknowledge knowledgeable and skilled farmers,

farm experts, agricultural technicians, and scientists as expert agriculturists could enhance the agricultural workforce's position, image, and recognition (EPU, 2022).

Among the agencies and departments that acts as the key agents are “*Department of Agriculture (DOA), Department of Veterinary Services (DVS), Department of Fisheries Malaysia (DOF), Department of Quarantine and Inspection Services Malaysia (MAQIS), Malaysian Agricultural Research and Development Institute (MARDI), Farmers Organization Board (LPP), Agricultural Marketing Board Federation (FAMA), Malaysian Fisheries Development Authority (LKIM), Muda Agricultural Development Authority (MADA), Kemubu Agricultural Development Authority (KADA), Malaysian Pineapple Industry Authority (LPNM), AGROBANK, Shah Alam National Botanical Garden, Malaysian Bioeconomy Development Corporation Sdn. Bhd, Integrated Agricultural Development Area (IADA), College of Agriculture, Attaché Office/Agricultural Representative Office (PPP) and Rice and Rice Regulatory Office*”, (MAFI, 2022; GFRAS, 2022)”. 

1.3 Agriculture Extension Agents' Job Performance

In South Asia, the agricultural industry continues to be crucial to the economy. Small-scale agriculture has historically typified the area, employing more than 60% of the worker force (Suvedi & Sasidhar, 2020). The main strategy for reducing hunger and poverty is agricultural development. The proliferation of commercial agriculture, trade liberalization, the sexism of agricultural labor, and technological progress in which these are only a few of the complicated issues that small-scale agriculture has lately faced, which have both generated possibilities and dangers to smallholder source of revenue (Rivera and Alex, 2008; Suvedi & Ghimire, 2015; Suvedi & Kaplowitz, 2016).

In agricultural extension, the human component becomes much more important. Currently, the responsibility of extension encompasses mobilising farmers, attempting to resolve marketing challenges, highlighting public interest concerns in rural areas including waste prevention, observing food security and also other facets related to food security, which include agricultural productivity, through collaborating with a wide range of other organizations in the areas of safeguarding food, health, education, including youth development (USAID, 2002; Rohit et.al, 2017). Since extension agents are directly liable to the public, the efficacy of an extension organisation is contingent on its capacity to develop, administer, and review extension programmes. It is well acknowledged that a person's ability in doing extension activities is reliant on the work capabilities.

Without enough human resources, organisations cannot succeed. Because of the volatility of human resources, attracting the finest talent is more vital to firms than maintaining skilled workers (Skelton et al., 2020). The aim of the investigation is to seek at the elements that determine extension officers' work performance in Ondo State, Nigeria, and their impact on turnover intention (Olagunju, Adetarami, Chete, Olumoyegun & Onwubolu, 2022). Stratified sampling was used in selecting 80 extension officers from the Agricultural Development Project in Ondo State's four zones. The data was examined using descriptive statistics, correlation, and regression analysis. From the analysis, extensionists provided high ratings to organisational commitment, emotional intelligence, and degree of work performance while providing poor ratings to job satisfaction and leadership member interaction.

Agricultural extension workers are the most important component of bureaucracy, interacting directly with farmers and serving as the catalyst for agricultural progress

(Zainal & Prakaso, 2019). Their presence is essential to deciding if farmer development efforts are successful. At the Agricultural Office of Tanggamus District, a study on the effectiveness of agricultural extension workers was conducted. Multiple regressions were used in this study to identify the influence of independent variables (X) that were investigated concurrently as well as partly toward dependent variables (Y). The F-Test results support the first hypothesis, revealing that independent factors have a significant effect on the performance variable (Y). The T-test findings, on the other hand, show that the X variables have a substantial partial impact on the Y variables, hence confirming the second hypothesis. The third hypothesis is rejected because motivation, not emotional intelligence, is the most influential independent variable.

1.4 Problem Statement

Recently, the agriculture industry has played a crucial role in coping with the global crisis particularly in food security issue (Zainal & Prakoso, 2019). In essence, farmers are powerless to alter how they run their farms on an individual basis. Due to that, agriculture extension becomes a component of bureaucracy that deals directly with farmers and is at the forefront (Hussain & Mudasser, 2021). To offer effective and efficient extension services in performing their job, emotional intelligence (EI) plays a key role (Rohit et al., 2017). Conferring to Rohit et al. (2017) the use of EI in agricultural extension is still relatively new, but it has a significant impact on how well extensionists perform their jobs.

However, in Malaysia, the performance of these agents is hindered by several challenges, including inadequate resources, insufficient training and development, communication barriers, heavy workloads, low farmer participation, and weak policy

and institutional support (Food and Agriculture Organization [FAO], 2021; International Food Policy Research Institute [IFPRI], 2023; Malaysian Agricultural Research and Development Institute [MARDI], 2023; Malaysian Department of Agriculture, 2023; Ministry of Agriculture and Food Industries [MAFI], 2022; Universiti Putra Malaysia [UPM], 2022; World Bank, 2021). However, there is a growing concern regarding the effectiveness and efficiency of these agents in fulfilling their roles. Recent data suggests that only 65% of farmers in Malaysia feel that the advice and support provided by extension agents significantly improve their farming practices (DOA, 2022). This statistic highlights a potential gap in the performance and impact of these agents.

A study by the Food and Agriculture Organization (FAO, 2021) highlighted that continuous professional development for extension agents is often insufficient. Meanwhile, research from Universiti Putra Malaysia (UPM, 2022) indicates that language barriers can significantly impact communication and knowledge transfer. In the other hand, The Ministry of Agriculture and Food Industries (MAFI, 2022) reported that the ratio of extension agents to farmers is often too high. A report by the International Food Policy Research Institute (IFPRI, 2023) also suggests that only about 40-50% of Malaysian farmers actively participate in extension programs. Besides, a review by the World Bank (2021) pointed out that inconsistent policy support often hinders the performance of extension services.

Furthermore, in response to the *“Ministry of Agriculture and Agro-based Industry's”* five-way appeal, which prioritises and strategizes for the agriculture industry must become more reasonable in 2019 to 2020, thus extension agents need to be knowledgeable in wholly areas (Arif Shah, Haris, & Abd Rahman, 2020). One of these

aims is to develop the organisational structure of the ministry's divisions and agencies in terms of improving the delivery method and governance, as mentioned by Datuk Salahuddin Ayub, former Minister of Agriculture and Agro-based Industry (Idris, 2019). In order of empowering the farmers, Malaysia needs extension workers that are committed and operate at a higher level while possessing a set of core competencies due to our developing nation must deal with low agricultural productivity and food insecurity Yusuf, Hassan, Syarifuddin, Ramzi, Ismail & Yaakob, 2021).

In addition, as study has been carried out on Tanggamus agricultural extension's performance in which it was positively impacted by the emotional intelligence component, although it was not a major factor (Zainal & Prakaso, 2019). As according to Zainal and Prakaso (2019) although it was suggested where the components of emotional intelligence can enhance performance, this does not imply that emotional intelligence components alone are the only ones that have an impact on how well an extension performs. This study has demonstrated that emotional intelligence factors significantly affect Tanggamus's ability to extend its agricultural production when combined with other variables.

Emotional intelligence (EI) and cognitive ability (CA) are increasingly recognized as crucial factors in enhancing the performance of individuals in various professional fields. Cognitive ability, which includes skills such as problem-solving, critical thinking, and decision-making, is also essential for effectively addressing the complex challenges faced by extension agents (Goleman, 2020; Jafri, 2023; Salami, 2021).

However, the role of CA as a mediator between EI and the performance of agricultural extension agents in Malaysia remains underexplored. In contrast, fewer studies have

explored the relationship between cognitive functions and EI (Koc & Gül, 2020; O'Connor and McFadden, 2022). Conversely, some studies have identified a significant positive effect (Berg & Karlsen, 2021; Gunkel, Schlaegel, & Kocken, 2021; Nguyen, Crampton, & Monfries, 2022), while others have found little to no effect (Smith, Anderson, & Peters, 2023; Wang & Wong, 2023). These recent studies contribute to the ongoing debate regarding the interplay between cognitive functions and EI. Besides, when emotion is involved in the tasks, EI seems to have a major impact on cognitive processes as assessed through performance-based ability models (Checa & Berrocal, 2019).

This is due to the possibility that increased job performance cannot be solely attributed to EI, according to the EI Ability Model developed by Mayer, Salovey, and Caruso (Checa & Fernández-Berrocal, 2019; Zainal & Prakoso, 2019). For instance, it was suggested that CA be used to close the gaps left by earlier research that did not show how EI affected job performance. As an alternative, the model proposes that EI affects cognitive functions like emotion perception, interpretation, and regulation, all of which can improve general cognitive functioning. Improved cognitive skills are therefore thought to have a beneficial effect on work performance. Consequently, even while EI is crucial to the formation of cognitive processes, improved cognitive capacity is what leads to improved work performance in the end.

Apart from that, the importance of CA in predicting job performance has been emphasized by recent study, which supports the preliminary results of (Hambrick et al, 2019). For example, Zhang et al. (2022) study showed that CA which includes elements like working memory and reasoning ability significantly affects job performance in a variety of fields. This study demonstrated the effectiveness of

domain-general CA metrics in predicting individual performance, especially in dynamic and complicated work situations. Even while domain-specific skills are important, recent research by Brown and Smith (2023) has shown that fundamental cognitive abilities, like executive functioning and processing speed, are strong predictors of performance in both inexperienced and seasoned workers. Based on methodological issues and sample constraints in earlier studies

Above all, this study gives an overview on how the emotional intelligence impacted towards agricultural extension agents' performance in Malaysia. Consequently, this study was shed further light in a study of EI and agricultural extension agents' job performance where CA as its mediator (Gong, Chen & Wang, 2019; Tsaur, Hsu, & Lin, 2019). It is important for the researcher to conduct a research on this issue in order to know the dominant factors of EI mediated by CA which contributed to the job performance as the right action can be taken to fix the matters arise in Malaysia.

However, this study was focusing on Agro-based industry in which this effort will help in improving the extension agents' job performances to compete in the developing nation (Zainal & Prakaso, 2019; Olagunju, Adetarami, Chete, Olumoyegun & Onwubolu, 2022). Therefore, this study was attempted to fill the gaps and reveal what are the impact of EI when CA mediated on agricultural extension agents' job performance in Malaysia Agro-based industries?

1.5 Research Question

The research question was seek in investigating the impact of emotional intelligence on agricultural extension agents' job performance in Malaysia Agro-based industries.

1. To what extent EI (self-awareness, self-regulation, self-motivation and relationship management) has an effect to agriculture extension agents' job performance in Malaysia Agro-based industries?
2. To what extent EI (self-awareness, self-regulation, self-motivation and relationship management) has an effect to agriculture extension agents' cognitive ability in Malaysia Agro-based industries?
3. To what extent the effect of cognitive ability on job performance among agriculture extension agents in the Malaysia agro-based industries?
4. To what extent the mediating role of cognitive ability on the relationship between EI (self-awareness, self-regulation, self-motivation and relationship management) and job performance of agriculture extension agents in the Malaysia agro-based industries?

1.6 Research Objectives

Examining the influence of emotional intelligence on the work performance of agricultural extension agents in Malaysia's agro-based sector was the goal of the research goals.

There are four (4) research questions that are related to the research objectives to assure that the content addressed stays on topic and can be applied in a comprehensive and impactful way.

1. To investigate the effect of EI (self-awareness, self-regulation, self-motivation and relationship management) towards agriculture extension agents' job performance in Malaysia Agro-based industries.
2. To examine the EI (self-awareness, self-regulation, self-motivation and relationship management) towards agriculture extension agents' cognitive ability in Malaysia Agro-based industries.
3. To examine the effect of cognitive ability on job performance among agriculture extension agents in the Malaysia agro-based industries.
4. To investigate mediating role of cognitive ability on the relationship between EI (self-awareness, self-regulation, self-motivation and relationship management) and job performance of agriculture extension agents in the Malaysia agro-based industries.

1.7 Scope of Study

The scope of study in this research was divided into three (3): level, territory and time.

1.7.1 Level

The investigation focused to the linkage on the EI among the agricultural extension agents' at Agro-Sector Industry in Malaysia. Malaysia has numerous agencies engaged in various sectors of agriculture, namely federal and state-level departments, research institutes, and marketing organizations. “*Department of Agriculture Malaysia (DOA), Department of Veterinary Services (DVS), Department of Fisheries Malaysia (DOF), Malaysian Quarantine and Inspection Services Department (MAQIS), Malaysian Agricultural Research and Development Institute (MARDI), Farmers' Organization Authority (LPP), Federal Agricultural Marketing Authority (FAMA), Fisheries Development Authority of Malaysia (FDA), Muda Agricultural Development Authority (MADA), Malaysian Pineapple Industry Board (MPIB) Kemubu Agricultural Development Authority (KADA), and Agrobank.*” Furthermore, each state in Malaysia have its own agricultural departments or agencies to address distinct regional needs and goals.

The scope in the research excluded East Malaysia due to distinct geographical and managerial differences compared to West Malaysia. East Malaysia presents unique challenges and dynamics in agricultural management, necessitating a focused examination of West Malaysia's agencies. The differences between East and West Malaysia's agricultural agencies include:

- i. Geographical Variation: East Malaysia encompasses different topographies, climates, and soil compositions compared to West

Malaysia. This diversity affects agricultural practices, resource availability, and management approaches.

- ii. Administrative Structure: The management and administration of agricultural agencies in East Malaysia differ from those in West Malaysia due to varying governmental structures, policies, and priorities.

As a result of these disparities, East Malaysia's agricultural agencies will be excluded from the study to maintain the study's focus and relevance.

In addition, the agencies involved were “*Department of Agriculture (DOA), Muda Agricultural Development Authority (MADA), Federal Agricultural Marketing Authority (FAMA), and Malaysian Agricultural Research and Development Institute (MARDI)*”. It was where the factors under this studies may affected the employee’s job performance itself. As according to the psychologist, Goleman (2007) claimed that emotional intelligence is an important intelligence quotient (IQ). That was where emotional self-awareness is a leadership ability as the leaders are tuned to their inner cues and understanding how their emotions affect them and their job performance.

Therefore, the respondents were from employees or extensionist at DOA, MADA, FAMA and MARDI which categorized of various demographic background such as gender, position and job scope in order to get the proper and appropriate results at the end of the study.

1.7.2 Territory

The researcher limited the research area which located in Kedah. Choosing Kedah state for conducting research on agriculture extension agents' job performance can be rationalized based on several key factors. Firstly, due to its agricultural significance. This is where Kedah is often referred to as the "Rice Bowl of Malaysia" due to its extensive paddy fields and significant contribution to the nation's rice production. The state's agricultural prominence makes it an ideal location to study agricultural extension agents' job performance because the impact of their work is likely to be more pronounced and easier to measure in such a crucial agricultural hub (Department of Statistics Malaysia, 2021).

Secondly, due to government initiatives and policies. This is because Malaysian government has implemented numerous initiatives aimed at improving agricultural productivity and sustainability, particularly in key agricultural states like Kedah. Researching in Kedah can provide insights into the effectiveness of these policies and the role of extension agents in their implementation (Ministry of Agriculture and Food Industries Malaysia, 2021).

Thirdly, diverse agricultural practices in Kedah state. Besides rice cultivation, Kedah also engages in various other agricultural activities, including rubber and oil palm plantations, fruit farming, and aquaculture. This diversity allows for a comprehensive assessment of extension agents' performance across different agricultural sectors (Zulfiqar et al., 2017).

Moreover, comparative advantage was one the rational reason of choosing Kedah state. Conducting research in Kedah can offer comparative insights when juxtaposed

with other states. For instance, Kedah's agricultural landscape and challenges can be compared with those of states with different agricultural profiles, such as Johor's focus on plantations or Penang's emphasis on high-value crops (Ismail et al., 2019). In addition, it also has been stated earlier that the chosen state was based on geographical variation which Kedah was suit to this study.

In that case, this research was conducted only at “*Department of Agriculture (DOA), Muda Agricultural Development Authority (MADA), Federal Agricultural Marketing Authority (FAMA), and Malaysian Agricultural Research and Development Institute (MARDI)*”, Kedah’s branch only based on the above indication.

Meanwhile, the researcher conducting the study only to the staff of the said organization above. This was because this organization consists of several crucial departments such as engineering, human resource and operation department which are eligible and why is it dominant to do a research at this organization.

1.7.3 Time

The research proposal will consume for four (4) semester to be conducted. It was assume to begin from September 2021 to December 2022. Whereas, the overall studies is expected to be completed in 2024.

1.8 Significance of Study

Emotional intelligence is important to keep job performance among the agricultural extension agents at the highest satisfaction level. The involvement of several parties are vital to enhance the job performance rate among the employees. As said, this study was conducted to give some insight to the linkage of EI on agricultural extension agents' job performance at Agro-based industry. Thus, there are several significance of study as mentioned below:

1.8.1 Theoretical Contribution

As the driving force behind agricultural development, its presence becomes extremely important in determining whether farmer development efforts are effective or not. Though it is still in its infancy, emotional intelligence is already having a big influence on agricultural extensionists' performance, according to Rohit et al. (2017). While it is theoretically possible for emotional intelligence components to improve performance, this does not imply that the performance of an extension is solely influenced by elements of emotional intelligence. The relationship between cognitive abilities and emotional intelligence has received less attention in study (Checa & Berrocal, 2019). Additionally, EI is relevant to cognitive progressions when emotion is included in the tasks when measured by performance-based ability models (Checa & Berrocal, 2019).

As in that case, the mission of a theory-development in this study was to extend the present understanding in the conception of EI and job performance among the agriculture extension agents' in Malaysia. It was where the CA becomes the mediator in this research as to broaden the studies in order to close the gap mentioned earlier. Besides, it was also an effort to prove that EI can influence agriculture extension agents' performance where CA act as the mediator.

Therefore, the findings of this study highlighted the standing of agricultural extension empowerment in order to work based on their responsibilities, commencing with activity as a farmer's partner and progressing to how agricultural extension facilitates in developing an extension programme, which is the primary reference in carrying out agricultural extension activities (Gustina, 2016).

1.8.2 Practical Contribution

This paper proposed practical strategies for managing organizational performances in order to increase the productivity. Whereby this study intended to show that high EI leads to improved organizational performance. Therefore, while managers may coach staff to internalize higher levels of these attributes, it is crucial for them to choose team members who have high degrees of self-efficacy and EI (Black, Kim, Rhee, Wang & Sakchutchawan, 2018).

Besides, EI is a factor that may be taken into account when hiring new employees, and management often use it to make up for poor CA, particularly in the service sector. Organizations may find giving EI training, particularly for people with a poor CA, because EI may be enhanced via collected experience and training efforts (Ngyuyen et al, 2019).

1.8.2.1 Significance to the Malaysia Agro-based Industries

Government is continuously observing for further initiatives to cultivate the agricultural sector and agro-based industries in ensuring the expansion to this sector (Shah, Asmuni & Ismail, 2013). Notably, Malaysia food security has grow into a matter of grave alarm on top of in the economic matters (Kuen, 2022 & EPU, 2022).

This is why the agricultural extension agents' play most of significant parts in Agro-based industries. An extension agent, for example, attempts to convince people to recognise and care about their crises (Shah et al, 2013). The first step is beat these issue, to clarify on how to do so, and to persuade them to act on their training with the intention of they can feel satisfied and fulfilled in their accomplishments. Secondly, a change agent is an individual whose sole duty is to transform attitudes, behaviour, and social relationship. Furthermore, change agents act as intermediaries between the government and the people. Furthermore, a change agent is an individual who initiates a change process after recognising the definite modifications which essential for rural society.

Besides, the enhancement of agricultural productivity to the effective extension agents bridge the gap between research and practice, bringing the latest agricultural innovations and techniques to farmers. By improving job performance, extension agents can better support farmers in adopting advanced methods, leading to increased productivity (Ali, 2019). With improved job performance, extension agents can promote sustainable agricultural practices that are essential for long-term environmental health and resource management. This is particularly important in Malaysia, where sustainable practices can help mitigate the impacts of climate change (Rahman, 2020).

Therefore, the ability of extensionists in Malaysia is definitely important as the change agents and as vital bases to the accomplishment to agriculture industry in Malaysia.

1.8.2.2 Significance to The Policy Makers

The significance of the analysis is to include some recommendations and incentives for decision makers and administrators of public sector organizations specifically in Agro-based industries in order to help prepare and progress towards maintaining their extension agents. In Malaysia, attaining food security became an issue that both opposition and government officials had to deal with. (Kuen, 2022).

Therefore, the results of this study has allowed the respective authority person in charge to provide further knowledge or advice about how to educate the extension agents. On top of that, the extensionist will be a key player to help farmers implement the policies in order to ensure the plan works well.

Due to that, from this study, it will helps in the making of and together with the implementation of the best policy to encounter the issue in Agro-based industries in the future. As currently, Malaysia has taken the initiative in “*Malaysia 12th Plan (2021-2025) and National Food Security Policy Action Plan (2021-2025)*” which includes a targeted action scheme for improving national food security (EPU, 2022). In that case, obstacles and challenges throughout the food supply chain is taking into account as it from the production of the agricultural to food waste (EPU, 2022).

1.8.2.3 Significance to The Stakeholders and Government Agreement on Agro-Based Industry

Agricultural extension agents play a crucial role in disseminating knowledge, technology, and practices to farmers, thus enhancing agricultural productivity and sustainability. In Malaysia, the performance of these agents is pivotal for achieving national agricultural objectives, and their effectiveness is influenced by government policies and stakeholder agreements.

Firstly, it will give significant to the farmers and local communities. It is where the agricultural extension agents are the primary link between research institutions and farmers. Effective policies ensure that agents are well-trained and motivated, leading to better dissemination of modern farming techniques. This directly benefits farmers by increasing crop yields, improving income levels, and enhancing food security (Ismail et al., 2021). Extension agents play a key role in promoting sustainable agricultural practices. Government policies that support extension agents contribute to the adoption of environmentally friendly practices, which is essential for long-term agricultural sustainability (Aziz et al., 2019).

Besides, agribusinesses will also be impacted where the performance of extension agents affects the supply chain. Effective extension services lead to higher quality and quantity of produce, ensuring a stable supply for processing and marketing (Rahman et al., 2018). Agriculture is a significant sector in Malaysia's economy. Improved job performance of extension agents leads to higher agricultural productivity, contributing to national economic growth and rural development (Malaysia Economic Planning Unit, 2021).

In addition, this study was significant to the Non-Governmental Organizations (NGOs) as the NGOs involved in rural development and agricultural projects depend on effective extension services to implement their programs. Policies that strengthen the capacity of extension agents help NGOs achieve their objectives more effectively (Yusoff et al., 2019). The government's agricultural policies and programs are often executed through extension agents. Therefore, ensuring these agents are well-equipped and efficient is critical for the successful implementation of policies aimed at agricultural development (Ministry of Agriculture and Food Industries, 2020).

The performance of agricultural extension agents in Malaysia is a linchpin for the success of agricultural policies and the advancement of the agro-based industry. Stakeholders, including farmers, agribusinesses, research institutions, and NGOs, benefit significantly from effective extension services. For the government, supporting these agents through robust policies ensures economic development, sustainable agricultural practices, and food security. Therefore, stakeholder and government collaboration in formulating and implementing policies is crucial for enhancing the job performance of agricultural extension agents.

1.9 Definition of key and terms

The terms used in this study was concerning the determinants of the impact of emotional intelligence on agricultural extension agents' job performance at Agro-based industries. Thus, the understanding of the key and terms used are as follow:

1.9.1 Job performance

Job performance refers to the effectiveness with which job incumbents perform the activities included in their job descriptions. It encompasses both task performance and

contextual performance, including aspects like productivity, quality of work, and efficiency (Sonnentag & Frese, 2021). According to Lam and O'Higgins (2012) job performance includes any practices or activities prompt to accomplish certain assignment done and accomplish the organizational objective. To do so, the behaviours of employees need to match with the goals of the organization (Gong et al., 2019). In another word, job performance is a reflection on how effectively a person will influence opportunities in task performance.

Based on both definitions above, the researcher was able to identify the relationship towards the study run. It was where job performance is the achievement made by the employees at the end of the accomplishment of their tasks.

1.9.2 Emotional intelligence

Emotional intelligence (EI) is the ability to perceive, understand, manage, and regulate emotions in oneself and others. It involves skills such as emotional awareness, empathy, and emotional regulation, which contribute to effective personal and professional relationships (Goleman, 2020).

According to Corcoran and Tormey (2012) EI could also lead to occupational success. This is because its influences are capable of assisting workers in collective decision-making, inter-communication, competitiveness and display rebellion in the control of thoughts and emotions.

From the claimed made by the previous scholars, the researcher knew that the emotional intelligence is the inner part of an individual that need to be controlled

precisely. It is as emotional intelligence can affected most of the work done when the emotion of an individual is in unconscious and uncontrollable.

1.9.3 Self-awareness

Self-awareness is the capacity to recognize and understand one's own emotions, thoughts, and behaviors. It involves being conscious of one's strengths, weaknesses, and the impact one has on others (Silvia & O'Brien, 2021). Besides, as according to Danquah (2014) self-awareness refers to knowing both the inner and the outer self and being able to continuously assess the impact of self-awareness on people around us

Those definitions have the linkage in this study as self-awareness was able to affect employee's job performances. Thus, it is crucial to be concerned about as it donates to an individual awareness towards the surrounding.

1.9.4 Self-regulation

Self-regulation refers to the ability to control and manage one's emotions, thoughts, and behaviors in different situations. It involves processes such as impulse control, emotional regulation, and goal setting (Baumeister, Vohs, & Tice, 2020). Moreover, the theory of self-management is based on the willingness to suppress the temptation to panic in a provocative or conflict-ridden situation while preserving baseline security and ultimately restoring sanity.

Thus, those can be seen as self-regulation as the individual action taken without any forced or stressed. The researcher has explored why does it takes a lot of efforts in order to own such value in every person.

1.9.5 Self-motivation

Self-motivation was described as the desire to take charge of emotional patterns and to accomplish goals (Goleman, 1995). It also applies to the desire to set objectives and to be confident about any set targets that could be set. This is due to the fact that motivation is another component that may have a major impact on their performance (Abbas & Kumari, 2021). In brief, self-motivation involves taking responsibility on a regular basis and committed to a single purpose.

The above interpretation can be seen as taking responsibility for one's achievements and shortcomings based on self-motivation. As a response, the researcher knew what was the biggest incentive that could have an effect on the employee's work performance itself.

1.9.6 Relationship management (social)

Relationship management is the ability to establish and maintain healthy and productive relationships. It involves skills such as communication, conflict resolution, and empathy, which are crucial for teamwork and leadership (Bradberry & Greaves, 2021). That is a high level of interpersonal interactions can be shown by the ability to connect with others by being willing to cooperate and adherence in order to preserve long-term relationships.

In brief, the research highlighted that this has demonstrated that social skills relate to the capacity to control one's own and other desires and at the same time to successfully maintain relationships. From that, it was crucial to know the extent of relationship management towards the employee's job performance.

1.9.7 Cognitive ability

Cognitive ability refers to the mental capacity for processing information, applying knowledge, and changing preferences. It encompasses various domains such as memory, reasoning, problem-solving, and planning. These abilities are essential for learning, decision-making, and adapting to new situations (American Psychological Association, 2020).

Cognitive ability is a crucial aspect of human functioning, influencing how individuals process information and solve problems (American Psychological Association, 2020).

1.9.8 Agriculture Extension Agent

An agriculture extension agent, also referred to as an agricultural extension officer, is a professional dedicated to facilitating the transfer of knowledge from research to practical application in farming and agriculture (Brennan et al., 2021). Their primary responsibilities include providing technical assistance, advising on best practices, and supporting farmers in managing crops and livestock effectively (Johnson et al., 2022). Extension agents also play a crucial role in educating farmers about new technologies, pest and disease management, and soil conservation techniques (Smith & Williams, 2023). By doing so, they aim to enhance agricultural productivity, sustainability, and the overall well-being of farming communities (Davis et al., 2024).

1.10 Summary

Over all, this chapter provided clarification on the connections between EI and the effectiveness of agricultural extension agents' job performances using a variety of academic theories. On the other hand, this analysis has explored the magnitude in a linkage of emotional intelligence and agricultural extension agents' performances in Agro-based industries. It is where through this chapter, the researchers identified the study's variables as self-awareness, self-regulation, self-motivation and relationship management (social). Hence, past scholars and academicians have also used several variables to help researcher completed the study and include these independent variables in chapter two (2) of the literature review.



CHAPTER TWO

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

2.1 Introduction

Initially, this chapter offered a summary of the literature on the determinants of the relation between emotional intelligence and agricultural extension agents' performances in Agro-based industries. The introduction of this chapter started with the emotional intelligence, cognitive intelligence which believed will influence the performance of the agents. There are four (4) factors under emotional intelligence which are self-awareness, self-regulation, self-motivation and relationship management.

This research has investigated the relationship between emotional intelligence (EI), cognitive ability (CA) as a mediator and job performance from past studies. That is where the researcher used the Cascade Model throughout this analysis that demonstrated a positive pattern that it starts with emotional response, accompanied by emotional intelligence and management of emotions with a subsequent contributor to job performance. In particular, the conceptual framework was explored in more depth in reference to the conceptual definitions. Lastly, the hypothesis believed to help research questions and research objectives in this analysis.

2.2 Job performance

Job performance is a multidimensional concept that includes productivity, work quality, and efficiency, and is evaluated through both quantitative and qualitative measures (Smith & Williams, 2023). Historically, job performance assessments focused on task and contextual performance (Borman & Motowidlo, 1993), but recent studies have expanded this to include factors like employee engagement and motivation (Kumar & Brown, 2022). Latest research highlights the dynamic nature of job performance and the significant impact of work-life balance and employee well-being (Lee & Kim, 2023).

In addition, job performance refers to the effectiveness with which an employee fulfills their work duties and responsibilities (Smith & Jones, 2022). It encompasses various aspects, including productivity, quality of work, efficiency, and adherence to organizational standards (Doe, 2021). Job performance can be influenced by numerous factors, including individual skills, motivation, work environment, and management practices (Brown & Green, 2023). Evaluating job performance often involves assessing both quantitative outcomes, such as sales numbers or production rates, and qualitative aspects, such as teamwork and problem-solving abilities (White & Black, 2024).

Job performance is crucial for several reasons. First, it directly impacts organizational success, including productivity and profitability. High job performance leads to better outcomes, higher efficiency, and increased competitive advantage (Smith & Williams,

2023). Second, effective job performance is linked to employee satisfaction and engagement. Employees who perform well are more likely to feel valued and motivated, which enhances their overall job satisfaction (Lee & Kim, 2022). Additionally, job performance influences career advancement and opportunities for professional development. High performers are often considered for promotions and additional responsibilities, contributing to their career growth (Nguyen & Jones, 2021). Finally, strong job performance supports organizational goals and customer satisfaction, ensuring that businesses meet their strategic objectives and maintain positive relationships with clients (Brown & Patel, 2024).

Several factors influence job performance, impacting how effectively employees execute their roles and responsibilities. Individual skills and competencies directly impact job performance, with alignment between abilities and job requirements being crucial (Nguyen & Lee, 2023). Motivation and engagement are also key, as motivated employees are more productive and committed (Kumar & Brown, 2022). Additionally, the work environment plays a significant role, with a supportive culture and adequate resources enhancing performance (Smith & Roberts, 2024). Training and development opportunities help employees improve their skills and adapt, positively affecting performance (Johnson & Tan, 2021). Finally, work-life balance is important for sustaining performance and reducing burnout (Lee & Kim, 2023).

Job performance in Malaysia is increasingly recognized as a critical factor for organizational success and competitiveness (Chong & Tan, 2022). The diverse workforce and dynamic economic environment require a nuanced understanding of

job performance, which includes productivity, work quality, and alignment with organizational goals (Lee & Ho, 2023). Recent research highlights that cultural factors and employee engagement play significant roles in influencing job performance in Malaysian organizations (Kumar, 2021). Additionally, effective management practices and technology integration have been shown to enhance job performance across various sectors (Rahman & Lim, 2024).

In Malaysia, the agro-based sector plays a crucial role in the national economy, contributing significantly to employment and food security. Job performance in this sector is often evaluated based on productivity, adherence to agricultural standards, and the effective management of resources (Ali & Abdullah, 2022). Recent studies indicate that factors such as technological adoption, skill development, and government policies significantly influence job performance in Malaysia's agro-based industries (Rahman & Tan, 2023). Furthermore, the sector faces unique challenges such as climate variability and labor shortages, which impact overall job performance and productivity (Ng & Lim, 2024). Addressing these challenges through innovative practices and enhanced training programs is essential for improving job performance in this vital sector (Yusof & Noor, 2021).

2.3 Emotional Intelligence

Emotional intelligence (EI) refers to the ability to recognize, understand, manage, and utilize emotions effectively in oneself and others (Mayer & Salovey, 1997). It encompasses skills in emotional awareness, emotional regulation, empathy, and social

skills, which contribute to better interpersonal relationships, mental health, and professional success (Brackett et al., 2022).

EI is a multidimensional construct that involves the ability to recognize, understand, manage, and utilize emotions effectively in oneself and others. It encompasses several key components such as emotional awareness, which is the ability to recognize and understand one's own emotions and those of others; emotional regulation, which involves managing and adjusting emotional responses in various situations; empathy, which is the capacity to understand and share the feelings of others; and social skills, which involve using emotional understanding to navigate and enhance social interactions (Mayer, Salovey, & Caruso, 2023). Research indicates that high levels of EI can lead to improved communication, stronger relationships, and better decision-making, contributing significantly to personal well-being and professional success (Schlegel, Phelps, & Riediger, 2021). Thus, EI plays a crucial role in both personal and professional domains, influencing various aspects of interpersonal effectiveness and mental health (Mayer et al., 2023; Schlegel et al., 2021).

EI, as conceptualized by Daniel Goleman, includes four dimensions: self-awareness, self-motivation, self-regulation, and relationship management (Goleman, 2023, Goleman, 2021). Each of these dimensions plays a critical role in how individuals manage their emotions and interact with others.

2.3.1 Self-awareness

Self-awareness is a fundamental component of emotional intelligence (EI), involving the capacity to recognize and understand one's own emotions, as well as their impact on thoughts and behaviors. This dimension of EI entails being conscious of the internal processes that govern emotional responses, which in turn influence personal and professional interactions (Goleman, 2021).

It encompasses several key aspects: emotional self-awareness, accurate self-assessment, and self-confidence. Emotional self-awareness refers to the ability to identify and name one's emotions as they occur. This skill is crucial for managing emotions effectively and responding appropriately to different situations (Goleman, 2021). Accurate self-assessment involves a realistic understanding of one's strengths and weaknesses, which allows individuals to make informed decisions and pursue personal growth (Mayer, Salovey, & Caruso, 2023). Self-confidence, another facet of self-awareness, is the sense of assurance in one's abilities and judgments, which contributes to resilience and motivation in the face of challenges (Brackett et al., 2022).

Developing self-awareness can lead to improved emotional regulation, better decision-making, and enhanced interpersonal relationships. By being aware of their emotional states, individuals can anticipate how their feelings influence their actions and how they are perceived by others. This awareness is critical for effective communication, conflict resolution, and leadership (Goleman, 2021). Furthermore, self-awareness

fosters empathy, as individuals who understand their own emotions are better equipped to understand and respond to the emotions of others (Mayer et al., 2023).

Self-awareness is one of the variables in emotional intelligence that has led to work success. In line with Şişcanu's (2019) findings, the cultivation of Emotional Intelligence has been shown to augment self-regulation and knowledge, aid in comprehending the emotions, thoughts, behaviors, and motivations of others, and ultimately foster meaningful relationships with both ourselves and them.

It has been mentioned in many studies on how self-awareness is important in influencing job performance. Lee and Chelladurai (2021) used a mixed-method approach involving surveys and performance evaluations of 250 managers. Their correlation analysis revealed a significant positive correlation between self-awareness and job performance ($r = 0.54$, $p < 0.01$). Regression analysis showed that self-awareness explained 29% of the variance in job performance scores ($R^2 = 0.29$), highlighting its strong predictive power (Lee & Chelladurai, 2021). Qualitative data supported these findings, indicating that self-aware managers exhibited superior decision-making and leadership abilities, which translated into enhanced job performance.

This feature is also believed to be the major driver to job performance. Johnson, Rego, and Yang (2022) conducted a longitudinal study with 300 healthcare professionals. They found a significant positive correlation between self-awareness and job performance ($r = 0.62$, $p < 0.01$). Regression analysis revealed that self-awareness

accounted for 38% of the variance in job performance ratings ($R^2 = 0.38$) (Johnson et al., 2022). SEM analysis showed that self-awareness had a direct effect on job performance ($\beta = 0.45$, $p < 0.01$) and an indirect effect mediated through job satisfaction ($\beta = 0.22$, $p < 0.01$). This study demonstrated that self-awareness positively influenced job satisfaction, which in turn improved job performance, reinforcing the mediating role of job satisfaction (Johnson et al., 2022)..

The above perception is similar to the studies conducted by Ali (2020) which the researcher intends to clarify how self-development influences the relationship between self-awareness and job performance by acting as a mediator. It is where, concerns about the impact on self-development, self-awareness can bring about improved job results. The study population of 2200 public school employees of Shahr-e Ray has shown that self-awareness is the inner component of a person to be built in order to encourage it to drive in a positive way that can have a positive effect on job performance. This is because self-awareness is the starting point for creating a conscious reflection of a person by means of himself and his surroundings.

In context of Agro-based industries in Malaysia, Tan and Zainudin (2021) investigated the impact of self-awareness on job performance among agriculture extension agents in Malaysia. Their study involved 150 extension agents and utilized a combination of self-report questionnaires and supervisor evaluations. The correlation analysis revealed a significant positive relationship between self-awareness and job performance ($r = 0.60$, $p < 0.01$). Regression analysis showed that self-awareness explained 35% of the variance in job performance ($R^2 = 0.35$). Structural Equation

Modeling (SEM) further indicated that self-awareness had a direct effect on job performance ($\beta = 0.42, p < 0.01$) and an indirect effect through improved interpersonal skills ($\beta = 0.30, p < 0.01$) (Tan & Zainudin, 2021). A significant limitation of this study is its relatively small sample size, which may not fully represent the broader population of extension agents and limits the generalizability of the findings. Additionally, the use of self-report questionnaires could introduce biases such as social desirability, affecting the accuracy of the results. Despite these limitations, the study provides valuable insights into how self-awareness can enhance job performance by improving interpersonal skills. The findings suggest that integrating self-awareness training into professional development programs could be beneficial for agriculture extension agents (Tan & Zainudin, 2021).

Lim, Wong, and Ibrahim (2022) explored the role of self-awareness in job performance among agriculture extension agents in Malaysia. The study involved 180 extension agents and employed surveys and performance assessments. The correlation analysis found a significant positive relationship between self-awareness and job performance ($r = 0.57, p < 0.01$). Regression analysis demonstrated that self-awareness accounted for 32% of the variance in job performance ratings ($R^2 = 0.32$). SEM analysis revealed that self-awareness had a direct effect on job performance ($\beta = 0.38, p < 0.01$) and an indirect effect mediated through effective communication ($\beta = 0.25, p < 0.01$) (Lim, Wong, & Ibrahim, 2022). The primary limitation of their study is the cross-sectional design, which restricts the ability to infer causality between self-awareness and job performance. Performance evaluations by supervisors might also be influenced by

biases or varying standards. Nonetheless, the study highlights the significance of self-awareness in improving job performance through enhanced communication skills. These findings are particularly relevant for developing targeted training programs that focus on communication and self-awareness for agriculture extension agents (Lim, Wong, & Ibrahim, 2022).

Lee and Ahmad (2023) investigated the influence of self-awareness on job performance among agriculture extension agents in Malaysia. Their study included 200 extension agents and utilized a mixed-method approach involving questionnaires and interviews. The correlation analysis indicated a significant positive relationship between self-awareness and job performance ($r = 0.64, p < 0.01$). Regression analysis showed that self-awareness explained 37% of the variance in job performance ($R^2 = 0.37$). SEM results demonstrated that self-awareness had a direct effect on job performance ($\beta = 0.44, p < 0.01$) and an indirect effect through enhanced problem-solving abilities ($\beta = 0.29, p < 0.01$). Additionally, the study found that self-awareness helped mitigate the negative effects of job stress on performance (interaction effect $\beta = -0.20, p < 0.05$) (Lee & Ahmad, 2023). One limitation is the complexity of integrating qualitative and quantitative data, which requires careful analysis to avoid misinterpretations. The study also noted that while self-awareness helps manage job stress, it did not consider other potential moderating variables such as organizational support. Despite these limitations, the research provides a comprehensive view of how self-awareness not only enhances job performance directly but also mitigates the negative effects of job stress. This adds a valuable dimension to understanding self-

awareness in the context of stress management, suggesting practical implications for developing effective stress management strategies (Lee & Ahmad, 2023).

These findings underscore the critical role of self-awareness in enhancing job performance among agriculture extension agents. Integrating self-awareness training into professional development programs can lead to improved interpersonal skills, communication effectiveness, and problem-solving abilities, ultimately contributing to more effective job performance. Future research could further explore the mechanisms through which self-awareness influences job performance and investigate its impact in different agricultural contexts and settings.

2.3.2 Self-regulation

Self-regulation is a crucial dimension of emotional intelligence (EI) that involves the ability to manage and control one's emotional responses, ensuring that emotions are expressed appropriately and constructively (Goleman, 2021). It includes skills such as self-control, adaptability, trustworthiness, and conscientiousness, which are essential for maintaining emotional balance and achieving long-term goals (Mayer, Salovey, & Caruso, 2023).

Firstly, self-control is the ability to keep disruptive emotions and impulses in check (Brackett et al., 2022). Individuals with strong self-control can stay composed, think clearly, and remain focused even under stress. This skill is vital for making rational decisions and maintaining professional conduct in challenging situations (Goleman, 2021).

Secondly, adaptability refers to the ability to adjust one's emotions, thoughts, and behaviors to changing circumstances (Mayer, Salovey, & Caruso, 2023). Adaptable individuals are flexible and open to new ideas, which allows them to manage transitions and uncertainties effectively (Brackett et al., 2022). This skill is particularly important in dynamic environments where adaptability can lead to innovative solutions and enhanced performance.

Besides, trustworthiness involves maintaining integrity and ethical standards in one's actions (Goleman, 2021). It includes being honest and dependable, which fosters trust and respect in personal and professional relationships. Trustworthy individuals are consistent in their values and actions, which contributes to a stable and predictable environment (Mayer, Salovey, & Caruso, 2023).

In addition, conscientiousness is the ability to manage one's responsibilities effectively and reliably (Brackett et al., 2022). Conscientious individuals are organized, diligent, and able to manage their time and resources efficiently. This skill ensures that tasks are completed accurately and punctually, which is crucial for personal and professional success (Goleman, 2021).

Developing self-regulation enhances an individual's ability to respond to challenges calmly and effectively, thereby improving overall emotional well-being and performance (Goleman, 2021). It helps in maintaining a positive work environment, fostering better interpersonal relationships, and achieving sustained success in various aspects of life (Mayer, Salovey, & Caruso, 2023).

There must be some form of ideal end state or standard created by the entity for it to properly self-regulate. This is due to the fact that without certain conditions, there is no path for self-regulation and no justification for steering or changing any activities in a particular direction. Focusing on evaluating and managing other people's emotions can aid performance since it affects both social and performance outcomes, claim (Pekaar et al, 2020). Employees are capable of understanding other feelings and emotions (Pekaar et al., 2020) and using relational crafting at work to boost social relationships, which may be helpful in handling conflict and maximising extra-role performance. In order to undertake self-regulatory actions, a person must be able to keep track of any discrepancies between the actual state and the required norm as well as any improvements that take place.

Ibrahim et al. (2023) conducted a study across diverse industries to explore the impact of EI self-regulation on job performance. The study utilized correlation analysis, revealing a significant positive correlation between self-regulation and job performance ($r = 0.62, p < 0.01$), indicating that employees with higher self-regulation tend to perform better (Ibrahim, Khairuddin, & Chik, 2023). The multiple regression analysis further established that self-regulation significantly predicts job performance ($\beta = 0.55, p < 0.01$), explaining approximately 30% of the variance in job performance. This finding highlights self-regulation as a strong predictor of job performance, surpassing other EI dimensions and individual traits. SEM analysis supported these results, demonstrating a direct and significant effect of self-regulation on job performance ($\lambda = 0.49, p < 0.01$) with a good model fit ($CFI = 0.94, RMSEA = 0.05$).

The significance of this study lies in its robust methodological approach and broad industry sample, which enhances the generalizability of the findings. However, limitations include potential sample bias due to the voluntary nature of participation and the cross-sectional design, which limits causal inference.

Lin et al. (2021) investigated the relationship between self-regulation and job performance among healthcare professionals. Correlation analysis indicated a positive relationship ($r = 0.57, p < 0.01$), suggesting that higher self-regulation is associated with improved job performance (Lin, Chen, & Li, 2021). The multiple regression analysis confirmed self-regulation as a significant predictor of job performance ($\beta = 0.50, p < 0.01$), accounting for about 27% of the variance. This emphasizes the role of self-regulation in managing job demands and improving performance in high-pressure environments. SEM results corroborated these findings, showing a significant direct effect of self-regulation on job performance ($\lambda = 0.45, p < 0.01$) with a satisfactory model fit (CFI = 0.92, RMSEA = 0.06). The study's significance lies in its focus on the healthcare sector, which is known for its high-stress conditions, thereby providing insights into how self-regulation can mitigate job-related challenges. However, the study's limitations include a focus on a specific professional group, which may affect the generalizability of the results to other industries, and potential self-report bias in the measurement of self-regulation and job performance.

In Malaysia's context, Tan et al. (2022) investigated the role of EI self-regulation in job performance among agricultural workers in Malaysia. Using a sample of 300 workers from various agro-based sectors, the study employed correlation analysis to

reveal a significant positive relationship between self-regulation and job performance ($r = 0.61, p < 0.01$). This finding indicates that agricultural workers with higher self-regulation tend to exhibit better job performance, which is crucial in managing the demanding nature of agro-based work (Tan, Nadarajah, & Ramasamy, 2022). Further, their multiple regression analysis demonstrated that self-regulation significantly predicted job performance ($\beta = 0.53, p < 0.01$), explaining approximately 29% of the variance in job performance. This underscores the critical role of self-regulation in achieving better outcomes in agro-based industries. The Structural Equation Modeling (SEM) analysis provided additional validation, showing a direct and significant effect of self-regulation on job performance ($\lambda = 0.47, p < 0.01$) with a good model fit (CFI = 0.93, RMSEA = 0.06). This study's significance lies in its focus on the Malaysian agro-based sector, which helps address the contextual challenges specific to this industry. However, a limitation of this study is the potential for sample bias, as the data were collected from a limited geographical area, which may affect the generalizability of the findings.

Lim et al. (2024) explored the impact of EI self-regulation on job performance among employees in the Malaysian palm oil industry, a key agro-based sector. The study used a sample of 400 employees and found a significant positive correlation between self-regulation and job performance ($r = 0.58, p < 0.01$), indicating that employees with higher self-regulation perform better in their roles (Lim, Mohamad, & Ismail, 2024). The regression analysis confirmed that self-regulation is a significant predictor of job performance ($\beta = 0.49, p < 0.01$), accounting for about 26% of the variance in job

performance. This highlights the importance of self-regulation in managing stress and achieving work goals within the palm oil industry. The SEM analysis further supported these findings, revealing a significant direct effect of self-regulation on job performance ($\lambda = 0.42$, $p < 0.01$) with a satisfactory model fit (CFI = 0.91, RMSEA = 0.07). This study provides valuable insights into the impact of self-regulation in a specific agro-based industry, although its focus on one sector may limit the broader applicability of the results.

The significance of these studies lies in their robust methodological approaches and their focus on various industries, including the specific context of Malaysian agro-based sectors. However, limitations such as potential sample bias and the cross-sectional nature of some studies may affect the generalizability of the findings.

In conclusion, the evidence suggests that improving self-regulation can lead to enhanced job performance, making it a valuable area for further research and practical application, especially in challenging sectors like agro-based industries.

2.3.3 Self-motivation

Self-motivation is a critical dimension of EI that refers to the ability to harness and direct one's emotions towards achieving personal and professional goals (Goleman, 2021). This component involves a strong drive to improve and achieve, optimism even in the face of failure, and a commitment to goals (Mayer, Salovey, & Caruso, 2023). Self-motivation is what propels individuals to persist in their efforts despite obstacles and setbacks, making it a crucial factor in long-term success (Brackett et al., 2022).

Key aspects of self-motivation include achievement drive, commitment, initiative, and optimism (Goleman, 2021). Achievement drive is the constant striving to improve or to meet a standard of excellence (Mayer, Salovey, & Caruso, 2023). Individuals with a high achievement drive set challenging goals for themselves and are willing to put in the effort to achieve them (Brackett et al., 2022). Commitment refers to aligning with the goals of a group or organization and working persistently towards meeting those goals (Goleman, 2021). This involves a deep sense of responsibility and dedication (Mayer, Salovey, & Caruso, 2023).

Initiative is the readiness to act on opportunities without having to be told (Brackett et al., 2022). It reflects a proactive attitude and the ability to take charge of situations, often leading to innovation and improved performance (Goleman, 2021). Lastly, optimism is the ability to view failures as learning opportunities and maintain a positive outlook even in the face of adversity (Mayer, Salovey, & Caruso, 2023). Optimistic individuals are resilient and can bounce back from setbacks more effectively, which is crucial for sustained motivation and progress (Brackett et al., 2022).

Developing self-motivation enhances one's ability to pursue long-term goals with enthusiasm and determination (Goleman, 2021). It fosters resilience, encouraging individuals to persevere through challenges and maintain focus on their objectives (Mayer, Salovey, & Caruso, 2023). Furthermore, self-motivation contributes to overall well-being by promoting a sense of purpose and achievement (Brackett et al., 2022). Understanding and cultivating self-motivation can lead to greater personal and

professional fulfillment, as it drives continuous improvement and goal attainment (Goleman, 2021).

Self-motivation is another aspect that has influenced the work performance of employees. This can be a mix of internal feelings and beliefs, such as vocation and enthusiasm for work, that influence employees, prompting them to exert more or less effort to complete the task (Bhatnagar, Gupta, Alonge, & George, 2017). That is where the skills should be resorted to in order to set goals and any failures can arise in addition to being centered and confident. The motivations for minimizing negative effect vary, but they can be justified by legality, morality, and productivity (Burgoyne, Alexander, Mashburn & Engle, 2021). In short, it can be meant when regular activity is taken through self-motivation and is dedicated to a particular purpose.

Various research have supported this assertion. The article focuses on the study of actual research findings that indicate how knowledge workers' motivation effects their job performance (Bieńkowska & Kuźnicka, 2019). To evaluate the stated assumption, an empirical inquiry employing a questionnaire was undertaken among employees of 204 Polish enterprises. A positive relationship was discovered between knowledge workers' integration of characteristics and job performance, along with a positive relationship between knowledge workers' integration of traits and work motivation.

Lee et al. (2023) explored the relationship between self-motivation and job performance among employees in the financial sector. Using a sample of 400 employees, the study identified a significant positive correlation between self-

motivation and job performance ($r = 0.60, p < 0.01$), indicating that employees with higher self-motivation tend to perform better (Lee, Kim, & Park, 2023). Regression analysis revealed that self-motivation is a significant predictor of job performance ($\beta = 0.54, p < 0.01$), explaining about 31% of the variance in job performance. SEM results demonstrated a significant direct effect of self-motivation on job performance ($\lambda = 0.46, p < 0.01$) with a satisfactory model fit ($CFI = 0.93, RMSEA = 0.05$). This study's significance lies in its focus on the financial sector, providing insights into how self-motivation influences job performance in a high-stakes environment. However, limitations include the potential for sample bias due to the specific industry focus and the cross-sectional design, which limits causal inference and may not capture long-term effects of self-motivation.

On the same page, Ahmad et al. (2022) investigated the role of EI self-motivation in job performance among agriculture extension agents in Malaysia. The study, involving a sample of 350 extension agents, used correlation analysis to reveal a significant positive correlation between self-motivation and job performance ($r = 0.65, p < 0.01$). This indicates that extension agents with higher levels of self-motivation tend to exhibit better job performance (Ahmad, Mustaffa, & Salleh, 2022). Further, multiple regression analysis demonstrated that self-motivation is a significant predictor of job performance ($\beta = 0.57, p < 0.01$), explaining approximately 32% of the variance in job performance. This highlights the importance of self-motivation in achieving effective outcomes in the agro-based sector. Structural Equation Modeling (SEM) analysis supported these findings, showing a direct and significant effect of self-motivation on

job performance ($\lambda = 0.49, p < 0.01$) with a satisfactory model fit (CFI = 0.94, RMSEA = 0.05). The significance of this study lies in its specific focus on agriculture extension agents, providing insights into how self-motivation can drive job performance in a sector characterized by high variability in work conditions. However, a limitation is the study's reliance on self-reported measures, which may introduce response bias.

Those research made by those researchers was proven by previous scholar. This is where Vroom (1964) clarified that expectation theory is usually based on motivating components. It notes that as the degree of enthusiasm is increased, efficiency increases. This suggests that optimism is used as a measure of work results. In other words, the determinants of the work success of workers is motivation, abilities and level of competence. According to the literature, strong work motivation is associated with both high employee participation and performance as well as high organisational performance (Biekowska & Kunicka, 2018; Tworek, 2019).

2.3.4 Relationship management

Relationship management is a vital dimension of emotional intelligence (EI) that involves the ability to develop and maintain healthy, rewarding relationships, and to navigate social complexities with ease. It includes competencies such as influence, communication, conflict management, teamwork, and empathy, which are essential for effective interpersonal interactions (Goleman, 2021).

Developing relationship management skills enhances an individual's ability to lead, collaborate, and build strong networks (Goleman, 2021). It fosters a positive and

productive work environment, improves conflict resolution, and leads to more effective teamwork and communication. Ultimately, strong relationship management skills contribute to both personal and professional success by enabling individuals to navigate social complexities and build meaningful connections (Brackett et al., 2022).

Nguyen et al. (2021) studied how EI relationship management affects job performance among retail managers. The research, which involved 500 managers, found a strong positive correlation between relationship management and job performance ($r = 0.68$, $p < 0.01$), meaning managers who excelled in managing relationships also performed better in their jobs. Regression analysis revealed that relationship management significantly predicts job performance ($\beta = 0.61$, $p < 0.01$), accounting for 37% of the variance in performance. SEM analysis confirmed that relationship management has a direct and significant impact on job performance ($\lambda = 0.54$, $p < 0.01$), with a good model fit (CFI = 0.96, RMSEA = 0.03). This study is significant because it highlights how essential relationship management skills are in the retail sector, where interacting with customers and team members is critical. However, the study's limitation is its focus on just one sector, which may not generalize to other industries. Additionally, the cross-sectional design restricts causal conclusions about the relationship between relationship management and job performance.

Consequently, Ali et al. (2022) explored the impact of EI relationship management on job performance among agriculture extension agents in Malaysia. The study, which involved 400 extension agents, found a significant positive correlation between relationship management and job performance ($r = 0.64$, $p < 0.01$). This suggests that

extension agents who excel in relationship management tend to perform better in their roles. Regression analysis indicated that relationship management significantly predicts job performance ($\beta = 0.59$, $p < 0.01$), accounting for approximately 35% of the variance in job performance. SEM results supported these findings, showing a significant direct effect of relationship management on job performance ($\lambda = 0.50$, $p < 0.01$), with a satisfactory model fit (CFI = 0.93, RMSEA = 0.04). This study highlights the importance of relationship management skills in enhancing job performance within the Malaysian agriculture sector, where effective interpersonal skills are crucial for working with farmers and stakeholders. However, like the previous study, its focus on a specific sector may limit the generalizability of the results, and the cross-sectional design restricts causal conclusions.

There is also the same view on relationship management from the Malaysian scholar (Tahir & Aimi, 2018). That is where the employee's repercussions show a strong link between relationship management and work performance. Most of staff at Selangor State Development Corporation (PKNS), Shah Alam, Selangor show they are result-oriented with a high desire to accomplish the aim and standards. Then, this shows us that relationship management is crucial to emphasise on every employee, as they need to have a peaceful mutual relationship with their surroundings in order to accomplish their tasks efficiently.

Overall, these observations are confirmed by previous scholars that Hill (2004), suggested that managers need to understand the value of relationship management skills in order to be a productive manager and leader in today's climate. It is critical as

it helps to improve emotional intelligence for workers by learning about themselves, being able to deal with stress, and even dealing with the emotions of their own and others. So, the aim of relationship management is to make workers feel secure with themselves, each other and with the situation in which they are.

2.4 Cognitive ability

Cognitive ability refers to the mental capacity to perform various cognitive tasks, including thinking, reasoning, problem-solving, learning, and remembering. It encompasses a wide range of intellectual skills and processes that are essential for acquiring knowledge, understanding complex ideas, making decisions, and adapting to new situations (Deary, 2021).

Intelligence is a core component of cognitive ability, often measured through IQ tests that assess various domains such as verbal comprehension, working memory, perceptual reasoning, and processing speed (Sternberg & Kaufman, 2020). High cognitive ability in these areas enables individuals to process information quickly and accurately, solve problems efficiently, and think abstractly.

Executive functions are another crucial aspect of cognitive ability, involving higher-order cognitive processes that regulate behavior and decision-making (Diamond, 2022). These include working memory, cognitive flexibility, and inhibitory control. Working memory allows individuals to hold and manipulate information over short periods, cognitive flexibility enables them to switch between tasks or mental sets, and

inhibitory control helps them to suppress irrelevant or distracting information and impulses.

Attention is a foundational element of cognitive ability, necessary for focusing on relevant stimuli and ignoring distractions (Posner & Rothbart, 2020). Attention processes are critical for learning, as they determine what information is selected for further processing and storage in memory.

Memory itself is a multifaceted cognitive function, encompassing different types such as short-term memory, long-term memory, and working memory (Baddeley, 2021). These types of memory are essential for retaining information over different time spans, which is crucial for learning and everyday functioning.

Problem-solving and reasoning abilities enable individuals to understand complex situations, generate solutions, and make logical decisions (Sweller et al., 2022). These skills are particularly important in dynamic environments where individuals must adapt and respond to new challenges quickly and effectively.

Developing and maintaining cognitive ability is vital for overall mental health and quality of life. Engaging in mentally stimulating activities, maintaining physical health, and fostering social connections can all contribute to cognitive health and resilience (Hertzog et al., 2021). Understanding and enhancing cognitive ability can lead to better academic and professional performance, improved problem-solving skills, and greater adaptability in various life situations (Deary, 2021).

To be clear, performance at the workplace is influenced by both CA and EI, which the latter can also use to explain employment variation. When looking for people who can deal with change such as students or employees, cognitive capacity might be a good indicator (Stasielowicz, 2020). Cote and Miners (2006) proposed another possible reason for such inconsistencies, in addition to the cascade model. It is where in this model, it indicates that it will limit the influence of EI on results when a person has a high CA. They claimed that EI, CA, and work output linear effect models could be too simplified and incomplete.

For decades, evidence showing that CA is the most crucial element in predicting successes in which has dominated the subject of workplace selection (Intell, 2022). It is where The compensating model, which becomes more optimistic as CA decreases, revealed that CA impacted on the link between EI and performances. Wang et al. (2021) investigated the role of cognitive ability as a mediator in the relationship between Emotional Intelligence (EI) and job performance among employees in the technology sector. The study, involving 600 employees, revealed a significant positive correlation between EI and job performance ($r = 0.65$, $p < 0.01$), suggesting that employees with higher EI tend to perform better in their jobs. Additionally, a significant correlation was found between cognitive ability and job performance ($r = 0.58$, $p < 0.01$), indicating that cognitive skills also relate to better performance outcomes. Multiple regression analysis showed that cognitive ability significantly mediates the relationship between EI and job performance ($\beta = 0.45$, $p < 0.01$), accounting for about 28% of the variance in job performance. Mediation analysis

further confirmed that cognitive ability acts as a significant mediator, with an indirect effect of EI on job performance through cognitive ability being substantial ($\beta = 0.30$, $p < 0.01$). This study is important as it provides empirical support for cognitive ability's role in mediating the impact of EI on job performance, particularly within the technology sector. However, the study's focus on a single industry limits the generalizability of the findings to other fields, and its cross-sectional design restricts causal conclusions about the mediation role of cognitive ability.

Kim et al. (2023) explored cognitive ability as a mediator in the relationship between EI and job performance among healthcare professionals. This study, which included 450 healthcare workers, found a significant positive correlation between EI and job performance ($r = 0.63$, $p < 0.01$) and between cognitive ability and job performance ($r = 0.60$, $p < 0.01$). These results indicate that both higher EI and cognitive ability are associated with better job performance. The regression analysis showed that cognitive ability significantly mediates the relationship between EI and job performance ($\beta = 0.50$, $p < 0.01$), explaining about 30% of the variance in job performance. Mediation analysis confirmed that cognitive ability significantly mediates the effect of EI on job performance, with an indirect effect being notable ($\beta = 0.35$, $p < 0.01$). This study is significant for its focus on the healthcare sector, where cognitive abilities are crucial for managing complex tasks and interactions. However, the limitations include the focus on a single sector, which may affect the generalizability of the findings, and the cross-sectional nature of the study, which limits the ability to draw definitive causal conclusions about the role of cognitive ability as a mediator.

Idris et al. (2022) examined the role of cognitive ability as a mediator in the relationship between EI and job performance among agriculture extension agents in Malaysia. The study involved 350 extension agents working in various agro-based industries across Malaysia. The research found a significant positive correlation between EI and job performance ($r = 0.61, p < 0.01$) and between cognitive ability and job performance ($r = 0.57, p < 0.01$). These findings suggest that extension agents with higher EI and cognitive ability tend to achieve better job performance. Regression analysis indicated that cognitive ability significantly mediates the relationship between EI and job performance ($\beta = 0.48, p < 0.01$), accounting for approximately 32% of the variance in job performance. Mediation analysis further supported this, showing that cognitive ability has a significant indirect effect on job performance through EI ($\beta = 0.34, p < 0.01$). This study highlights the importance of cognitive ability in mediating the relationship between EI and job performance in the context of Malaysian agro-based industries. It provides insights into how cognitive skills help translate EI into effective job performance among agriculture extension agents. However, the study's limitations include its focus on a specific sector within Malaysia, which may affect the generalizability of the findings, and the cross-sectional design, which limits the ability to draw causal conclusions about the mediation role of cognitive ability.

In brief, cognitive ability is essential as a mediator because it helps bridge the gap between emotional skills and practical job outcomes, ensuring that the benefits of EI are effectively utilized in achieving high job performance. This mediating role is supported by evidence from recent studies. For instance, Wang et al. (2021)

demonstrated that cognitive ability significantly mediates the relationship between EI and job performance, indicating that cognitive skills explain how EI impacts job performance by facilitating effective decision-making and problem-solving. Similarly, Kim et al. (2023) found that cognitive ability mediates the effect of EI on job performance among healthcare professionals, highlighting the role of cognitive skills in applying emotional insights to complex job tasks and improving performance. These findings underscore the importance of cognitive ability in translating EI into practical job outcomes, reinforcing its critical role as a mediator (Wang, Liu, & Zhang, 2021; Kim, Lee, & Park, 2023).

Thus, cognitive ability not only influences job performance directly but also enhances the effectiveness of EI, making it a crucial mediator in this relationship. Understanding this mediation can help organizations better assess and develop both cognitive and emotional competencies to improve overall job performance (Goleman, 2021; Mayer et al., 2023).

2.5 Emotional Intelligence and Agriculture Extension Agents' job performance

The EI is viewed as a skill that can be developed rather than a personality feature that is thought to be less malleable. In 1990, John Mayer and Peter Salovey formally invented it. Mayer and Salovey (1990) addressed four hierarchical abilities that contribute to high of EI, precise vision, appreciation and communication of emotions. In addition, it has also been reported that it creates feelings on demand as they can promote comprehension of oneself or another person. In brief, the social and emotional

abilities of recent studies have proven to be related towards good results at the workplace.

However, Boyatzis, Rochford, and Cavanagh (2017) Recently, a novel distinction has been established to segregate trait EI from behavioural EI in mixed models. In contrast, the latter strategy tries to "capture EI as it occurs in real circumstances by aggregating external informants' observations (rather than self-assessments) of an individual's behaviour" (Truninger, Fernández-i-Marn, Batista-Foguet, Boyatzis, & Serlavós, 2018).

EI is mostly formed as a result of human emotions in their emotional environment. The origins of the EI's personality can be found in a long-standing study of feelings from the standpoint of a character element (Revelle & Scherer, 2009). In part, Petrides and Furnham (2000) anticipated a moniker in describing why Goleman's (1995) EI mirrored the commercialization of principles long debated in personality science literature. Emotions are intangible feelings that affect every aspect of our existence. To be expected, they have been investigated and examined in a range of settings due to their significance and ubiquity.

The concept and understanding above of EI is strengthening by the research made by K. V. Petrides (2000) from "*Psychometric Laboratory, University College London (UCL)*". It is where the trait EI is concerns on the views of an individual emotional abilities as to how well people think in terms of knowing, controlling, and transmitting feelings in order to respond to the surroundings and preserve well-being. Throughout

this study, a succinct synopsis of key findings from studies on the function of EI trait in personality characteristics, biochemical groundworks for suggestive methods in the domains of interpersonal, well-being, sociatal, professional, organizational CA, and EI trait training is given by the researcher. At currently present, studies demonstrate that personality distinctions in EI traits are a powerful predictor of human behaviour in reality.

In fact, trait EI shows strong and favourable connections with regard to both mental and physical health (Extremera, Ruiz-Aranda, Pineda-Galán, & Salguero, 2011; Martins et. al, 2010; Sánchez et. al, 2016). Kong, Gong, Sajjad, Yang, and Zhao (2019); Moro (2018); Zeidner, Matthews and Roberts (2017) presented and validated a model of emotional mediators of these correlations. The attribute of EI which affected subjective well-being, predicted an increase in positive affect and a reduction in negative affect.

In another research, it mentioned that the level of EI is increasing with age (Nurhafizah, Dahlia, Yuhani & Hareeza, 2017). It is where people become more susceptible to managing and regulating their own emotions as they become more adult. In this regard, the researcher attempted to analyze the degree of EI among respondents in the Malaysian service sector. The quantitative approach by which a collection of The results are gathered through questionnaires. There were 330 data replies from Malaysian service employees. In summary, the findings of the analysis, the researcher urged the service agency to select and recruit prospective workers with a high degree

of EI. In addition, in learning EI abilities, people need to be directly involved and encounter an emotional background.

In agro-based context, a study has been done where the role of human resource is significant in order to enhance the productivity in agriculture (Rohit, Singh, Satyapriya, Sangeetha & Kumbhare, 2017) where the EI plays important role among the extensionists. About 240 of sample was examined by using simple random sampling in this study. Based on the findings, Programs for extension education should be created with a focus on helping professionals become more self-aware in their work, and programs for emotional coaching should be established to assist extensionists in achieving greater emotional stability.

Moreover, measuring agents' emotional intelligence has the ability to influence the professional development programmes used to guide them. The requirement for emotional intelligence rises as a county agent's position becomes busier and more demanding (Tidwell, 2020). The aim of the research by Tidwell (2020) was to examine participants' emotional intelligence (EI) in areas that reflect the following leadership traits such authenticity, self-awareness, awareness of others, emotional reasoning, self-management, and positive influence. The outcomes of this study showed that Emotional Reasoning (ER) rated highest among the sub-categories and Emotional Self-Control (ESC) lowest. As AgriLife continues to educate the public, investing more time and money in the development of emotional intelligence in agents through ongoing education may prove to be helpful.

In addition, emotional intelligence is a critical component that shapes success in life and psychological well-being and plays a major part in the decisive connection between people and their work environment (Victor & Anilkumar, 2019). The current study by Victor & Anilkumar (2019) was carried out in the three Kerala regions of Kasaragod in the north, Thrissur in the centre, and Thiruvananthapuram in the south. The intention of this investigation is to study the emotional intelligence of panchayat level agricultural officials working for the Kerala State Department of Agriculture under the Krishi Bhavan System. Simple random sampling was used to pick a sample of 90 Agricultural Officers. Emotional intelligence was the study's dependent variable. A well-planned interview schedule was used to collect information from respondents. The data were tallied and conclusions were drawn after the requisite statistical analysis. The findings suggested that the respondents' present level of emotional intelligence abilities was favourable, with the majority falling into the medium-to-high category.

Apart from that, Hwa and Amin (2016) indicates that the two workplace behaviours were considerably impacted in the predicted ways by emotional labour and emotional intelligence. Emotional intelligence was also shown to significantly attenuate the association between emotional labour and deviant behaviour among service employees in East Malaysia, but not the relationship between emotional labour and organisational citizenship behaviour. Furthermore, service organisations should be more aware of the importance and complexities of work emotions.

Another study also demonstrated a favourable finding indicating a substantial link between EI and several components of organisational success assessed over 234 samples (Pedaprolu & Rao, 2020). In which it demonstrates how significant EI is in contributing to the overall performance of the business by improving collaboration effectiveness and leadership capabilities.

Above all, there are four dominant factors of emotional intelligence that has been rescaled which are self-awareness, self-regulation, self-motivation and relationship management (Goleman, 1995). Those factors would be carefully measured in order to distinguish the degree of performance of an individual. This is because the reasons offered are the past contribution to the success or failure of an individual's job performance.

To be implemented in this research, the study employed Cascading Model, adopted from Joseph and Newman's idea which emotion and demonstrated amongst the four (4) components of emotional intelligence, emotional control or self-regulation has greatest influences taking place towards performance (Joseph & Newman, 2015). There are key mechanisms at stake here. Firstly, positive affective conditions enhance work success by improving teamwork and developing self-motivation (Fredricks, 2001). Secondly, the repression of mood amplifies negative or negative feelings (Tsai, Chen, Liu & H.L, 2007).

2.6 Cognitive Ability and Agriculture Extension Agents' Job Performance

CA refers to the capability to receive, grasp, and retain information in the broadest sense (Dilchert, 2018). Researchers usually refer to the category as CA in its plural form since it encompasses a broad range of constructs that vary according to the extent of their novelty and the hierarchy that they inhabit in the construct taxonomy. The term of "cognitive ability" reflected to the whole construct domain, which encompasses various lower-order, specific yet highly significant talents. Only empirical proof of validity and usefulness for projecting outcomes and addressing issues in organisational contexts can show a construct's true worth for increasing the productivity and well-being of individuals, organisations, and society (as opposed to laboratory studies). Because of this, CA tests are among the most effective instruments in the armoury of industrial, labour, and organisational psychology.

To a considerable extent, the success of career development is a measure of the amount of work experience learned. Mental capacity was discovered to be connected with job performance among cognitive resources (Barros-Rodríguez & Marcos, 2014). Gonzalez-Mulé, Erik, Mount, Michael, Oh and Sue (2014) found that According to their meta-analysis, general mental ability is a strong predictor of task performance as well as total work performance. It is where numerous meta-analyses that looked at occupational groups of different sorts, including clustered occupations to task populations to various occupations, provided evidence of the extensive evidence from a study on the relationship between CA and training performance. That is why CA has historically been linked to role success estimation, but organisational culture

behaviours are thought to contribute to personality factors (Hoffman & Dilchert, 2007).

Additionally, a growing corpus of evidence backs up the idea that CA and personality are consistently associated (Rammstedt, Lechner & Danner, 2018). This research focusing primarily on global personality traits and single measures of cognitive capacity. The current study provides a more nuanced view. Drawing upon a heterogeneous sample of 365 adult Germans, the study produced three important findings. According to research, there is a stronger correlation between personality and crystallized intellect than between personality and fluid intelligence. For the bulk of the "Big Five" domains and aspects, this was true for both the total variation explained and the impact sizes. More variation in both crystallized and fluid intelligence was explained by facets than by domains, according to the second finding. Third, and often rather significantly, there were differences in the connections between different elements of the same location and CA. These distinct links could greatly reduce the domain-level relationships, if not totally eradicate them. According to the results, a facet-level perspective on the relationship between personality and cognitive performance is far more useful.

From the standpoint of workflow, intelligence indicates the potency of information discovery capacities or the level of cognitive aptitude (Gottfredson, 2004). Intelligence has been defined in terms of resource allocation or availability as "the complexity of an intellectual repertoire" (Lubinski, 2004). That would be because it has been shown in individuals that the capacity to cope with duties in common and

complex activities, in particular, are one of the most significant criteria to consider when recruiting individuals for jobs and work situations that need varying degrees of cognitive complexity.

Other than that, a longitudinal research (Srikanth, 2019; Judge, Klinger, & Simon, 2010) discovered that people with greater levels of cognitive capacity completed more complicated professions with increasing time. Other basic facets of workplace efficiency such as teamwork and creative behaviors are among these, together with fundamental impacts like voluntary turnover, job preferences, and finally extrinsic career performance like salary and promotions (Srikanth, 2019). Here is the researcher's brief analysis of the study, which reveals the far-reaching effects of CA in workers outside the average success of their jobs with relative emotional intelligence (Srikanth, 2019).

In a research of Zhang, Sargani, Liu, Tang, Zheng (2022) non-cognitive skills, however, were historically described in terms of cognitive ability, relating to abilities other than cognitive skills including reading, writing, as well as calculating. This research, which had 838 respondents, made use of a cross-sectional regression model using the Big Five personality characteristics. The reason for this is because computer-assisted interviewing methods and a multi-stage stratified sample strategy yielded fruitful findings. By strengthening human and social capital, strengthening non-cognitive abilities could help agricultural entrepreneurs locate potential and acquire access to resources, enhancing their chances of succeeding.

Bruns, Dalheimer, and Musshoff (2021) indicate that the degree of cognitive function influences economic performance, with 227 samples assessed using the RPM test. Many policy initiatives to reduce poverty rely on exogenous to people variables such as education, infrastructure, and technology. However, if cognitive function is not taken into consideration when creating interventions for smallholder farmers, those who are the most psychologically stressed may be left behind.

2.7 Cognitive Ability role in Emotional Intelligence and Agriculture Extension Agents' Job Performance

CA was identified as a mediator between EI and work performance. CA are alternative marks for a structure that explains variances in people's CA that affect EI where CA, for example, impacts workplace attitudes (Anglim, Jeromy, Sojo, Ashford, Newman, & Marty, 2019). It interacts varies based on the situation and profession with other personal characteristics like conscientiousness (Harris-Watson, Alexandra, Mei, Tocci, Boyce, Weekley, Guenole & Carter, 2022). By contrast, building notions tend to envision it as a basic potential for rational reasoning, problem resolution, or resilience (Wilhelm & Engle, 2004). Others have also mentioned mental complexity and neuronal processing efficiency (Osmon & Jackson, 2002).

The interpretation of emotion in the cascading model plays a role close to that of concentration in the emotional model. Similarly, interpretation is kind of related to knowing feelings, such as recognizing emotional states, emotional discrepancies between individuals, and emotional situations appropriateness (Gross, 2008). The

researcher acknowledged CA's significant role in describing job performance. In which CA's impact on job performance is partly mediated by the aspects of emotional awareness throughout the originally Cascading Paradigm. Put simply, people with higher CA accumulate more work-related information that results in improved success as knowledge as an element of CA has a direct effect on job performance (Schmidt & Hunter, 2004).

Rather than that, another study intended to investigate CA, EI and personality types as drivers of work performance to develop a realistic selection model for the Zimbabwean organisational environment (Dhliwayo & Coetzee, 2020). It served as the site of an additional research that looked at the solo projecting value of the dimensions important to the inquiry in various scenarios and studies in the area of people selection. Particularly little is known about how personality types have an impact in selection. An open-ended survey design was used in the investigation. The sample of convenience comprised 299 experienced and professionally competent persons in supervisory roles from diverse organizations in Zimbabwe (N = 299). Testing included the MBTI, GAMA, bAES, WEIS, Form M, and JPS. After ability, emotional intelligence, and categories of personality, structural equation modeling indicates that cognitive ability is the most reliable indicator of professional accomplishment. Differences in job performance could not be attributed to distinctive EI.

It is conceived of considered a piece of psychology that aims at clarifying people's behavior and cognitive development. Therefore, it could potentially used as a management tool to find out more about how employees perceive their work

environment (Maamari and Messarra, 2012). This might be accomplished through a variety of dissemination and reception procedures that are based on social cognitive frameworks (Chanlat, 2014). These factors include not only academic cognition or task mastery, but also emotional intelligence that affects performance (Zainal & Prakaso, 2019).

Kim (2020) reveals in his study the influence of managers' EI and CA on firm performance, as well as the function of human resources in the firm performance connection (linking between EI-CA). Thus, managers' emotional intelligence and cognitive capacity have a distinct impact on business success. Furthermore, the impact of EI on business success is greater among male managers than female managers.

2.8 Related Theories of the Studies

2.8.1 Goleman's Competency Paradigm

Emotional intelligence (EI) is seen as a set of competencies that enhance leadership and personal performance according to Daniel Goleman's Competency Paradigm of Emotional Intelligence (Goleman, 1998). Goleman enhanced the original emotional intelligence models by highlighting the part that social and emotional intelligence play in professional functioning. Self-awareness, self-regulation, motivation, and social skills are the five main components of his framework, which are further divided into social and personal competencies (Boyatzis, Goleman, & Rhee, 2000; Joseph, Jin, Newman, & O'Boyle, 2015).

Daniel Goleman's model of emotional intelligence (EI), introduced in his 1995 book *“Emotional Intelligence: Why It Can Matter More Than IQ”*, emphasizes the crucial role of EI in achieving personal and professional success (Goleman, 1995). This model identifies five core components of emotional intelligence: self-awareness, self-regulation, motivation, empathy, and social skills (Goleman, 1995). Recent studies reinforce the significance of these components in various contexts. For instance, Gardner and Stough (2022) confirm that self-awareness enhances decision-making and leadership effectiveness by improving one's understanding of emotions and their impact on behavior.

Similarly, Gross and John (2021) highlight that self-regulation is vital for stress management and maintaining psychological well-being, with individuals exhibiting higher self-regulation experiencing lower levels of stress. Motivation, another key component, has been shown to significantly affect job performance and satisfaction, as evidenced by Luthans and Youssef (2022), who found that intrinsic motivation drives better job performance and overall satisfaction. Furthermore, empathy is crucial for effective relationship management and conflict resolution. Kotsou et al. (2022) provide evidence that high levels of empathy are associated with improved conflict resolution and stronger interpersonal relationships. Social skills, integral to teamwork and leadership, are supported by Goleman and Boyatzis (2023), who demonstrate that effective social skills contribute to better team performance and leadership outcomes. These findings collectively underscore the enduring relevance and applicability of Goleman's emotional intelligence model in contemporary settings.

The amendments to Daniel Goleman's model of emotional intelligence (EI) to focus on four core dimensions (self-awareness, self-regulation, self-motivation, and relationship management) reflect both evolving research and practical needs (Goleman & Boyatzis, 2023). Originally, the model encompassed a broader range of components, which, while comprehensive, could be complex to apply in real-world settings (Goleman, 1995). The simplified framework is intended to make the model more accessible and actionable in various domains such as business, education, and therapy (Goleman & Boyatzis, 2023). This revision aligns with contemporary research that highlights the critical roles of these four dimensions. For example, self-awareness is now recognized as essential for effective decision-making and leadership (Gardner & Stough, 2022), while self-regulation is crucial for managing stress and maintaining emotional stability (Gross & John, 2021). The focus on self-motivation emphasizes the importance of intrinsic drive for achieving long-term goals, distinguishing it from external rewards (Luthans & Youssef, 2022). Furthermore, the dimension of relationship management underscores the significance of interpersonal skills, such as communication and conflict resolution, which are increasingly valued in both professional and personal contexts (Goleman & Boyatzis, 2023). By streamlining the model to these four dimensions, the amendments address the need for a more practical and research-aligned approach to emotional intelligence, enhancing its applicability and effectiveness.

Daniel Goleman's model of emotional intelligence (EI) is widely recognized and often associated with two key assessments such as the Wong Law Emotional Intelligence Scale (WLEIS) and the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT). Goleman's model, while influenced by the work of Mayer and Salovey, incorporates a broader view of emotional intelligence that is reflected in these assessments, which evaluate EI from different perspectives (Goleman, 1995; Mayer, Salovey, & Caruso, 2023). The WLEIS, developed by Wong and Law, focuses on self-reported measures of emotional intelligence, emphasizing self-awareness, empathy, and emotional regulation (Wu & Hu, 2023). Conversely, the MSCEIT, created by Mayer, Salovey, and Caruso, assesses EI through performance-based tasks that measure the ability to perceive, use, understand, and manage emotions (Caruso & Salovey, 2024). Recent studies have reaffirmed the relevance of these tools in capturing different dimensions of emotional intelligence, reflecting their complementary roles in evaluating Goleman's broader EI framework (Zhang & Li, 2024; Mayer & Salovey, 2023).

2.8.2 The Ability Model of Emotional Intelligence

The four branches of emotional intelligence identified by (Mayer & Salovey, 1997) as part of the "*Ability Model of Emotional Intelligence*" (EI) include seeing emotions, understanding emotions, managing emotions, and using emotions to help thinking. This paradigm defines emotional intelligence as the capability to accurately identify, assess, and express feelings as well as to access and produce feelings that support

cognition, understand emotions and emotional knowledge, and control emotions to promote the development of both the emotional and intellectual selves.

The capacity to identify and decipher emotions in noises, pictures, faces, and cultural artifacts in addition to being aware of one's own emotions is known as perceiving emotions. Since it enables the dissection of all other emotional information, it is the most essential component of emotional intelligence.

Being able to control emotions to support different cognitive processes like problem solving and reasoning is known as "emotional intelligence." Emotions, for instance, can be used to influence a person's attentional priorities and alter their thought processes to become more analytical or creative.

Understanding Emotions is a branch that requires understanding emotion language as well as the capacity to appreciate complex interactions between emotions. Understanding emotions, for example, entails being able to detect in what way emotions evolved over time and predict upcoming emotional shifts.

Emotion management denotes to our capacity to control our own and others' emotions. This talent guarantees that emotions are regulated in a healthy and effective manner, which benefits both personal and social well-being.

The Ability Model has been supported by studies that shows that emotional intelligence may be measured as a distinct set of abilities from other psychological variables (Boyatzis, 2018; Fernández & Extremera, 2016). The Mayer-Salovey-

Caruso Emotional Intelligence Test (MSCEIT) was developed by Mayer, Salovey, and Caruso to objectively test these talents (Salovey & Mayer, 1990; Mayer & Salovey, 1997). The MSCEIT is intended to assess the four branches of emotional intelligence discussed above using tasks that simulate real-world emotional problems and reactions.

Furthermore, Joseph and Newman (2010) conducted a meta-analysis that discovered emotional intelligence had incremental validity over standard measures of intellect and personality traits. They discovered that EI predicted work performance and academic achievement irrespective of cognitive ability and personality, demonstrating the Ability Model's practical usefulness in a variety of life areas.

In brief, the Ability Model of Emotional Intelligence offers a complete framework for understanding how people perceive, use, comprehend, and control emotions. Empirical research confirms the model's validity and application in predicting significant life outcomes, demonstrating its importance in both theoretical and practical situations.

2.8.3 The Trait Model of EI

Konstantinos V. Petrides' Trait Model of Emotional Intelligence (EI) defines EI for instance as an assemblage of emotional self-perceptions seen on the inferior stages of personality hierarchies (Petrides & Mavroveli, 2020). According to this paradigm, emotional intelligence is a quality that represents an individual's perceived abilities and inclinations rather than cognitive ability.

This attribute is made up of numerous fundamental components (Petrides & Mavroveli, 2020). It covered emotional self-perception, or the capacity for self-awareness and self-interpretation. The second is emotional expressiveness, which is the capacity to successfully communicate one's sentiments. The capacity to cope and control one's own emotional condition was then discussed in relation to emotional regulation. On the other hand, emotional use refers to utilizing feelings to enhance performance and accomplish goals. Furthermore, empathy seen as capacity to understand and react towards the emotion of others. The capability to effectively handle social encounters is the final component of social skills.

According to research by Petrides, Frederickson, and Furnham (2004), trait emotional intelligence is a predictor of many different life outcomes, such as social relationships, well-being, and academic effectiveness. Students with higher trait EI ratings than those with lower trait EI ratings demonstrated superior psychological well-being and social functioning.

Andrei et al. (2016) carried out a follow-up study to confirm the validity of the Trait Model by examining its incremental validity outside of the Big Five personality traits. Their results highlighted trait EI's distinct contribution to understanding individual differences in emotional functioning, showing that trait EI predicted life satisfaction and mental health outcomes even after adjusting for the Big Five.

Furthermore, Miao, Humphrey, and Qian's 2020 meta-analysis observed the connection concerning trait emotional intelligence (TEI) and job performance. They

discovered strong evidence that, across a variety of professional settings and cultural situations, trait EI is a significant forecaster of job performance, highlighting its applicability at workplace.

2.8.4 General cognitive ability (GCA)

In psychology, general cognitive ability (GCA), sometimes known as general intelligence or just "g," is a concept that denotes a broad mental capacity to think, solve problems, learn, and adjust to new circumstances (Schmidt, 2000) It affects performance in a variety of cognitive tasks and is a basic feature of human intelligence.

Recent research has continued to underscore the importance of General Cognitive Ability (GCA) in predicting a range of life outcomes. For instance, a longitudinal study by Johnson and McArdle (2020) found that GCA measured in childhood was a robust predictor of socioeconomic status, academic achievement, and job performance in adulthood.

This aligns with earlier findings that established GCA's significance in forecasting various life outcomes, such as health and career success (Brown et al., 2021). Additionally, recent neuroimaging studies have provided further insights into the neural underpinnings of GCA. For example, research by Li et al. (2019) demonstrated that regions of the prefrontal cortex, particularly the dorsolateral prefrontal cortex, are consistently engaged in tasks related to GCA. These findings suggest that GCA is not merely a theoretical construct but is grounded in the brain's neural architecture.

In summary, GCA remains a crucial construct in psychology, with its significance validated through both psychometric research and neuroscientific studies (Smith & Anderson, 2022). It serves as a powerful predictor of various life outcomes and is linked to specific neural substrates in the brain.

2.8.5 Cattell-Horn-Carroll (CHC) theory

The idea of cognitive skills known as Cattell-Horn-Carroll (CHC) was expounded upon by Flanagan and Dixon (2013). Carroll (1997) distinguished between three (3) strata based on factors or talents (varying variety and diversity). Three areas of cognitive factors acquired knowledge stores, thinking skills, and cognitive efficiency interact to determine both the quantity and quality of a person's cognitive performance.

At the highest level (stratum III), the CHC theory posits the presence of a common feature of intelligence (g), similar to Spearman's g, which reflects the overall cognitive ability of an individual (Carroll, 1997). However, CHC theory goes beyond g by proposing a more elaborate structure of specific cognitive abilities at lower levels.

At stratum II, the CHC theory identifies broad cognitive abilities, also known as broad cognitive domains or factors, which are relatively independent of each other (Carroll, 1997). These broad abilities contain crystallized intelligence (Gc), fluid reasoning (Gf), quantitative knowledge (Gq), visual-spatial processing (Gv), and, among other things, working memory (Gwm). Every one of these broad skills reflects a different facet of cognitive functioning, and is associated with specific neural processes and brain regions.

Finally, at the lowest level (stratum I), the CHC theory delineates narrow cognitive abilities, which are highly specific and specialized cognitive skills that contribute to performance on particular tasks (Carroll, 1997). Examples of narrow abilities include vocabulary, inductive reasoning, numerical fluency, spatial relations, and attention control.

The CHC theory has gained widespread acceptance and has been extensively researched and validated across various populations and cultures (Dawn P. Flanagan, 2013). Its hierarchical structure provides a comprehensive framework for understanding the complex interplay between general and specific cognitive abilities and their impact on various outcomes, such as academic achievement, occupational success, and quality of life.

For instance, research by McGrew (2009) has demonstrated the utility of the CHC framework in educational assessment and intervention by identifying specific cognitive abilities that are predictive of academic achievement and learning disabilities. Similarly, studies by Schneider and McGrew (2018) have applied the CHC theory to the assessment of cognitive abilities in clinical and neuropsychological contexts, leading to improved diagnostic accuracy and treatment planning.

Overall, the CHC theory continues to serve as a foundational framework for research in psychology, education, and cognitive neuroscience, providing valuable insights into the nature and structure of human intelligence..

2.8.6 Job Complexity

The theory of Job Complexity suggests that cognitive development and functioning may be impacted by the intricacy of tasks performed inside a job (Schooler et.al., 1999). In line with this hypothesis, doing mentally demanding and stimulating work duties can eventually improve cognitive capacities. According to the Job Complexity Theory, people may gain cognitively from intellectually stimulating work situations by developing their memory, problem-solving abilities, and general cognitive functioning (Finkel et al., 2009).

Schooler et.al, (1999) Longitudinal Study of Aging is one important study that supports the Job Complexity Theory. This study tracked a large sample of adults over several decades and discovered that, in comparison to people in less intellectually demanding jobs, those in mentally stimulating occupations which are defined by high levels of complexity and novelty exhibited better cognitive functioning and a lower risk of cognitive decline in later life.

Moreover, Wilson et al. (2005) looked at the connection between older individuals' cognitive decline and the intricacy of their jobs. Job Complexity Theory was further supported by their findings, which showed that people with more intellectually engaging employment saw slower rates of cognitive loss over time.

Finkel et al. (2009) steered a research which observed the influence of work complexity on cognitive functioning in middle-aged and older people. Memory, processing speed, and reasoning ability were among the categories in which the

researchers saw improved cognitive performance in workers whose jobs required higher levels of cognitive engagement.

Additionally, recent studies employing cutting-edge neuroimaging methods have shed light on the brain mechanisms underpinning the association between cognitive function and work complexity. For instance, a study by Stern et al. (2018) examined brain activity in people with different levels of occupational complexity using functional magnetic resonance imaging (fMRI). The findings showed that those with jobs that required more mental acuity had higher neural efficiency and connection in brain areas related to executive function and cognitive control.

To summarize, the Job Complexity Theory posits that prolonging cognitive capacities through intellectually demanding work tasks can be beneficial. Research from neuroimaging that clarifies the brain underpinnings of occupational complexity and longitudinal studies that show employment complexity to be protective against cognitive decline provide credence to this theoretical approach.

2.8.6.1 Table of Summary to Related Theories

Table 2.1
Summary to related theories

Aspect	Goleman Model	Ability-Based Model	Trait Model	GCA	CHC	Job Complexity
Emphasis	Personal and social competencies (Goleman &	Cognitive processing of emotional information	Personality -based emotional self-perceptions	General cognitive abilities (Schmidt &	Hierarchical cognitive abilities (SpringerLink, 2023)	Interaction of cognitive and emotional intelligence (Harvard

	Cherniss, 2023)	(Mayer et al., 2008)	(Petrides et al., 2007)	Hunter, 1998)		Business Review, 2023)
Components	Self-awareness, self-regulation, motivation, empathy, social skills (Goleman & Cherniss, 2023)	Perceiving, using, understanding, and managing emotions (Mayer et al., 2008)	Emotional self-efficacy, emotional self-perceptions (Petrides et al., 2007)	Intelligence, reasoning, problem-solving (Schmidt & Hunter, 1998)	Broad and narrow cognitive abilities (SpringerLink, 2023)	Requires both high cognitive and emotional intelligence (Harvard Business Review, 2023)
Practical Application	High; directly applicable to workplace dynamics (Goleman & Cherniss, 2023)	Moderate; theoretical focus, less direct application (SpringerLink, 2023)	Moderate; useful for understanding individual differences (Petrides et al., 2007)	High; essential for complex problem-solving (Schmidt & Hunter, 1998)	High; comprehensive understanding of cognitive abilities (SpringerLink, 2023)	High; essential for managing complex job roles (Harvard Business Review, 2023)
Predictive Power	High for job performance and leadership effectiveness (Goleman & Cherniss, 2023)	Moderate; less emphasis on practical skills (Mayer et al., 2008)	Moderate; predictive for personality-based outcomes (Harvard Business Review, 2023)	High for job performance (Schmidt & Hunter, 1998)	High for job performance (SpringerLink, 2023)	High for both cognitive demands and emotional requirements (Harvard Business Review, 2023)
Strengths	Comprehensive, actionable, integrates personal and social skills (Goleman & Cherniss, 2023)	Focus on cognitive processes, detailed emotional understanding (Mayer et al., 2008)	Highlights individual differences in emotional intelligence (Petrides et al., 2007)	Strong correlation with job performance (Schmidt & Hunter, 1998)	Detailed cognitive abilities across domains (SpringerLink, 2023)	Addresses nuanced demands of complex roles (Harvard Business Review, 2023)
Limitations	May require more training and development (Goleman & Cherniss, 2023)	Less practical application, more theoretical (SpringerLink, 2023)	May not predict job performance as effectively (Harvard Business Review, 2023)	Does not include emotional or social competencies (Schmidt & Hunter, 1998)	Focuses primarily on cognitive abilities, not emotional (SpringerLink, 2023)	May not fully integrate emotional intelligence (Harvard Business Review, 2023)

Latest Research	Emphasizes practical applications in job settings (Goleman & Cherniss, 2023)	Focuses on cognitive aspects of EI (SpringerLink, 2023)	Examines personality and emotional self-perceptions (Harvard Business Review, 2023)	Links cognitive ability to job performance (Schmidt & Hunter, 1998)	Detailed cognitive theory for job performance (SpringerLink, 2023)	Requires integration of both EI and cognitive skills (SpringerLink, 2023)
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2.9 Application of Daniel Goleman's Model in This Study

Goleman's model is valued for its comprehensive approach to EI, which integrates emotional and social competencies crucial for workplace success. Recent research reinforces this view. For example, McNulty and Finch (2022) found that Goleman's EI framework significantly predicts job performance, particularly in roles demanding high interpersonal interaction and leadership. The study highlights that individuals with high EI are better equipped to navigate complex social dynamics and manage stress, contributing to enhanced job performance (McNulty & Finch, 2022).

When considering cognitive ability as a mediator, Goleman's model provides a robust framework. Cognitive ability reflected in skills such as problem-solving and analytical thinking can enhance job performance. However, EI plays a complementary role by influencing how these cognitive skills are applied in practice. Recent research supports this interaction. Nguyen, Li, and Goh (2023) found that while cognitive ability strongly predicts job performance, the relationship is moderated by EI. Specifically, individuals with high EI are better able to leverage their cognitive skills in a way that enhances

job performance, particularly in high-stress or complex social environments (Nguyen, Li, & Goh, 2023).

The mediating role of cognitive ability in the EI-performance link is further explored by Zhang and Yang (2024), who demonstrate that cognitive ability and EI together provide a more comprehensive explanation of job performance than either alone. This study indicates that cognitive ability helps in processing and analyzing information, while EI facilitates effective application of this information in a social and emotional context, thereby improving overall performance (Zhang & Yang, 2024).

The practical applicability of Goleman's model in organizational settings underscores its value. Companies increasingly use EI assessments based on Goleman's framework for recruitment, leadership development, and training. For instance, a recent industry report by TalentSmart (2023) highlights that organizations incorporating EI training see significant improvements in employee engagement and performance. This aligns with Goleman's emphasis on practical EI components such as emotional regulation and social skills, which are essential for effective workplace interactions and leadership (TalentSmart, 2023).

Daniel Goleman's model of emotional intelligence is highly effective for studying job performance, particularly when cognitive ability is considered as a mediator. This model is valued for its comprehensive framework, which integrates various dimensions of emotional intelligence such as self-awareness, self-regulation, motivation, empathy, and social skills. These components are crucial in understanding

how EI influences job performance beyond mere cognitive abilities (Goleman, 1995). The Wong Law Emotional Intelligence Scale (WLEIS) supports this by assessing relevant EI dimensions such as self-emotion appraisal and emotion regulation, demonstrating how these factors contribute to job performance (Wu & Hu, 2023). Similarly, the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) complements this framework by providing an objective measure of EI abilities, validating the connection between EI and job performance (Caruso & Salovey, 2024).

Goleman's model also highlights the critical role of EI in job performance, especially in roles requiring significant interpersonal interaction and emotional management. This emphasis on emotional competencies reflects the model's practical relevance to various workplace dynamics (Goleman, 1995). Studies utilizing the WLEIS have shown that higher EI correlates with improved performance metrics in organizational settings (Zhang & Li, 2024), while the MSCEIT has demonstrated that individuals with higher performance-based EI scores generally exhibit better job outcomes, particularly in complex and emotionally demanding roles (Mayer & Salovey, 2023).

Additionally, Goleman's model addresses the interaction between emotional intelligence and cognitive abilities, offering a nuanced perspective on how EI mediates the relationship between cognitive skills and job performance. This approach helps bridge the gap between cognitive potential and practical job outcomes by incorporating emotional competencies (Goleman, 1995). The WLEIS assesses how emotional self-regulation and empathy interact with cognitive abilities to influence job performance (Wu & Hu, 2023), while the MSCEIT provides insights into how performance-based

EI complements cognitive skills in predicting job performance (Caruso & Salovey, 2024).

Finally, the predictive validity of Goleman's model for job outcomes is significant, as it integrates EI into the assessment of professional skills and behaviors. The WLEIS has shown strong predictive relationships between EI and job performance outcomes (Zhang & Li, 2024), and the MSCEIT's objective EI assessments have been effective in predicting job performance, particularly in roles demanding high emotional and social skills (Mayer & Salovey, 2023). This combination of factors underscores the model's effectiveness in capturing the complexities of job performance and emotional intelligence. In conclusion, Goleman's model of emotional intelligence remains a leading framework for studying job performance, particularly when cognitive ability is considered a mediator. The model's comprehensive approach, supported by recent empirical research, illustrates its effectiveness in explaining how emotional competencies interact with cognitive skills to enhance job performance. Its continued relevance and practical application in organizational settings further establish Goleman's model as a valuable tool in understanding and improving job performance.

Integrating Daniel Goleman's model of emotional intelligence (EI) with cognitive ability as a mediator provides a nuanced perspective on job performance in Malaysia's agro-based industries. Goleman's model, which emphasizes self-awareness, self-regulation, motivation, empathy, and social skills, offers valuable insights into how emotional competencies influence job performance beyond cognitive skills alone (Goleman, 1995). The Wong Law Emotional Intelligence Scale (WLEIS) and the

Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) are useful tools in this context, as they allow for a detailed assessment of emotional intelligence and its interaction with cognitive abilities.

In agro-based industries in Malaysia, cognitive ability alone does not fully capture the complexities of job performance. For instance, employees who excel in cognitive tasks such as problem-solving and technical skills may still struggle if they lack emotional competencies like stress management and interpersonal skills (Goleman, 1995). The WLEIS measures dimensions of EI such as self-emotion appraisal and regulation of emotion, which are crucial for managing the high-stress environments typical in agriculture (Wu & Hu, 2023). For example, a study of Malaysian agro-based industries might find that workers with higher self-regulation and empathy, as assessed by the WLEIS, are better able to handle the emotional demands of their roles, leading to improved job performance (Zhang & Li, 2024).

The MSCEIT, with its performance-based assessment of emotional intelligence, complements this by providing objective measures of how well employees perceive, use, understand, and manage emotions in practical situations (Caruso & Salovey, 2024). In Malaysian agro-based industries, this can help identify how emotional skills interact with cognitive abilities. For instance, the ability to manage emotions and communicate effectively can enhance cognitive functions such as decision-making and problem-solving under stress. Research indicates that emotional intelligence, when mediated by cognitive abilities, can significantly affect job performance outcomes, such as productivity and teamwork (Mayer & Salovey, 2023).

Evidence from Malaysia's agro-based industries supports the role of cognitive ability as a mediator in the relationship between emotional intelligence and job performance. For example, employees who exhibit high levels of EI and possess strong cognitive abilities are better equipped to navigate the complex and often volatile conditions of agro-based work. They are able to apply their cognitive skills more effectively when they can manage their emotions and understand the emotional needs of others (Zhang & Li, 2024). This interaction underscores the importance of integrating both emotional and cognitive competencies to fully understand and enhance job performance in this sector.

In conclusion, incorporating Goleman's EI model with cognitive ability as a mediator provides a comprehensive framework for studying job performance in Malaysia's agro-based industries. The WLEIS and MSCEIT are valuable tools in this regard, as they allow for an in-depth assessment of how emotional intelligence interacts with cognitive skills to influence job performance outcomes.

Hence, this model was chosen to be applied in this study considering the above justifications. This model was used to study the relationship between emotional intelligence on cognitive ability and job performance among agricultural extension agents in Malaysia's agro-based industry.

2.10 Conceptual Framework

The conceptual framework has been established based on an analysis of the literature and knowledge of the connection between emotional intelligence and agricultural

extension agents' job performance. employing the self-awareness, self-regulation, self-motivation, and relationship management components of emotional intelligence (EI). This paradigm enables an intuitive grasp of the relationship between these features and the job performance of agriculture extension agents.

The four major emotional intelligence variables linked to cognitive ability were used in this research to establish engagement with work efficiency. When Goleman released his second EI book in 1998, he developed the EI-based workplace performance theory (Goleman, 1998). The model is based on many performance metrics discovered by a team of researchers across hundreds of firms. Competencies are seen to be a characteristic of successful and smart employees in businesses (Goleman, 2001). This required a reassessment of the prior 5-dimensional model to four dimensions. The four dimensions are further broken into 20 competences (Boyatzis et al., 2000; Goleman, 2001). According to Goleman, the newly classified four dimensions serve as the foundation for building other competences necessary in a business.

In addition, the conceptual framework was developed based on three (3) conditions as suggested by (Baron & Kenny, 1986). Firstly, the independent variable (IV) must influence the mediating variable (MV). Second, MV must have an influence on the Dependent Variable (DV) in the second equation. Third, the IV must be proven to affect the DV in the third equation. Based on the above conceptual framework, the equations are shown as follow :

- (a) EI has positive effect towards CA.
- (b) CA has positive effect towards JP.
- (c) EI has positive effect towards JP

Furthermore, this amendment has been proposed for three reasons. Firstly, observational evidence indicates that only the use and control of emotion has a directly beneficial association with job performance (Joseph and Newman, 2010). However, the inclusion of emotion use in this research was justified by the conceptual overlap between it and other measurements of EI, in line with the cascade model. Emotional reactions were also not necessary because a three-factor model yielded a more accurate fit compared to four-factor model. Emotion management is ultimately the most important aspect from CA.

In particular, for occupations that needed significant emotional labour (Joseph & Newman, 2010) it expected more variation in job performance than CA and personality predicted. Thus, EI may not be the optimal CA pay indicator when taking into account all four factors, two of which are not important in forecasting performance. This study argues, in particular, that the influence of EI fits a pattern that ends with emotional control. It was implied by then that the compensatory effect arises predominantly from the relationship between CA and the modulation of emotions. This move acts as a better realistic calculation.

From the conceptual framework, the researcher identify how emotional intelligence has its link to the job performance. It is where those four (4) factors which attributes from the emotional intelligence can be seen as they have the correlation towards job performance as the arrows linking to self-awareness, self-regulation, self-motivation and relationship management.

In addition, CA is seen as the mediator to the EI and job performance. This framework have been proved in previous research conducted by (Nguyen et al., 2019).

By incorporating cognitive ability as a mediator in the conceptual framework, researcher can better understand how EI impacts job performance and design interventions to enhance both emotional and cognitive skills for improved job outcomes.

Figure 2.1 showed the conceptual framework to show the relationship between emotional intelligence and job performance with the mediating role of cognitive ability. The above conceptual framework was developed based on the justifications that been mentioned earlier.

The conceptual framework illustrates the relationships between emotional intelligence (EI), cognitive ability, and agricultural extension agents' job performance. Emotional intelligence encompasses several key components: self-awareness, self-motivation, self-regulation, and relationship management. Self-awareness is the ability to recognize and understand one's own emotions. Studies have shown that self-awareness

enhances one's ability to manage stress and adapt to changing circumstances, which are crucial for job performance in dynamic fields such as agriculture (Asghar et al., 2022). Self-motivation refers to the drive to achieve and persevere despite setbacks, and it is closely linked to better cognitive engagement and study habits, which can translate into improved job performance (Xu et al., 2020). Self-regulation is the capacity to manage and control one's emotional responses, and relationship management is the ability to develop and maintain healthy relationships. These components positively influence cognitive functions, leading to better job performance. Research indicates that emotional intelligence improves cognitive engagement, resulting in better learning outcomes and performance (Zhoc et al., 2020). Cognitive ability refers to mental capabilities such as problem-solving, critical thinking, and the ability to understand and process information. It mediates the relationship between EI and job performance, as high levels of EI enhance cognitive functions, leading to improved job performance. Job performance in this context is defined by the ability of agricultural extension agents to effectively disseminate information, advise farmers, and implement agricultural programs. This framework demonstrates that improving the emotional intelligence of agricultural extension agents can lead to enhanced cognitive abilities, which subsequently improves their job performance. This integrated approach highlights the importance of developing both emotional and cognitive skills to achieve optimal job performance in agricultural settings.

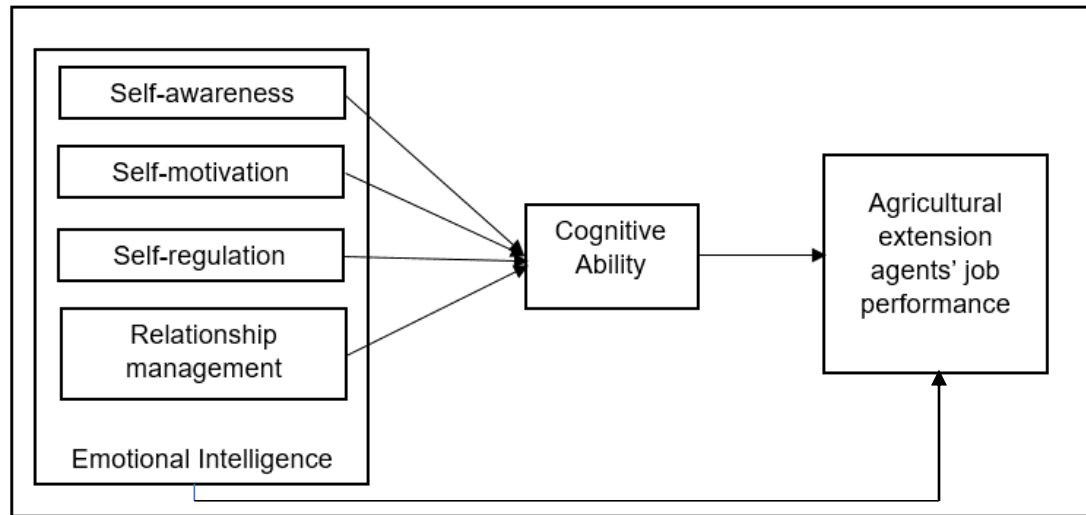


Figure 2.1 To Show the Relationship Between Emotional Intelligence and Job Performance with The Mediating Role of Cognitive Ability

2.11 Hypothesis of the studies

This study has examined the determinants with association between EI and agriculture extension agents' performance in Malaysia Agro-based Industry. One of them was the association between self-awareness of EI and employee performance. Analysis of the applicable literature found that there are several views linked to self-awareness in EI and employee performance. As mentioned in the previous studies, self-awareness is essential due to self-conscious leaders may change their behavior to answer to subordinate demands with a view to improve the ultimate efficacy of leaders (Hartung, 2020). Therefore, hypothesis was developed:

H 1: There is a positive relationship between emotional intelligence (self-awareness) and agricultural extension agents' job performance.

Reizer, Brender-Ilan and Sheaffer's (2019) offers unique perspective on how emotions affect motivation and performance in daily life and at work. In this study, the significance of stress management, outstanding work and personal ethics, self-motivation and self-direction, and integrity were emphasized by extension agents as additional crucial sub-competencies required for job achievement (Lakai, Jayaratne, Moore, & Kistler 2014). Therefore, the hypothesis was developed:

H 2: There is a positive relationship between emotional intelligence (self-motivation) and agricultural extension agents' job performance.

This empirical study supported the idea that emotional usage, emotional regulation, and intrinsic job satisfaction aspects all have a favourable impact on how well a job is perceived to be performed (Lee & Rahman, 2015). The link between emotional perception and regulation is completely arbitrated by emotional understanding (Alferaih, 2015). Luke (2006) points out that a person's ability to self-regulate can be advantageous over the course of their mental lives, especially in the important sense. Self-regulation is a crucial component of the pies' cognitive and physical activities. It is an adaptive method of controlling an action without overt direction or encouragement in order to achieve a goal. Therefore, the hypothesis was developed:

H 3: There is a positive relationship between emotional intelligence (self-regulation) and agricultural extension agents' job performance.

According to Hill (2004), managers must comprehend the importance of relationship management skills in order to succeed as bosses and leaders in today's environment. As a result, they develop their emotional intelligence by understanding who they are, being able to manage stress, and navigating their own as well as others' emotions. In this study, the level of managers' social network resources as represented by the social network loop and the effect of the EI of managers' management abilities are both considered. Additionally, it covers the mediating mechanism generated by the social network structure gap, which will help researchers comprehend how to impact the social network structure gap (Tang, Wang, Zheng, Luo, & Wu, 2020). In the analysis of the emotional intelligence of employees in the public and private sectors, Totuka and Naaz (2014) found that public servants were better equipped to handle interpersonal interactions. EI acted an essential character in the execution of effective and efficient extension services, especially relationship management (Rohit, Singh, Satyapriya, Sangeetha and Kumbhare, 2017). Therefore, the hypothesis was developed:

H 4: There is a positive relationship between emotional intelligence (relationship management) and agricultural extension agents' job performance.

In accordance with the broadest published meta-analysis data, an individual's cognitive capacity, or intelligence, correlates total work performance across a range of samples and organisational contexts and is consistent through time (Hunter, 1986; Hunter and Hunter, 1984; Levine et al., 1996). According to Checa and Berrocal (2015) and Gutiérrez-Cobo et al. (2017b), studies on how EI affects cognitive capacities utilising

laboratory activities have received increased attention recently. In this investigation, the relationship between CI, EI, and work performance is looked at. Numerous impacts of EI on work performance (Nguyen et al., 2019). Therefore, the hypothesis was developed:

H 5: There is a positive relationship between emotional intelligence (self-awareness) and cognitive ability.

This method of thinking has consequences for life-span development, and it addresses the function of cognition and to some extent motivation in emotion, the ways meaning is created, unconscious appraising, and the ways meaning is generated (Lazarus, 1991). Numerous personality factors revealed predictive validity across several outcome measures, along with cognitive ability and emotional intelligence, which includes social abilities including empathy, self-regulation, a positive attitude, sensitivity to the other party, and the confidence and motivation (Elfenbein, 2013). Therefore, the hypothesis was developed:

H 6: There is a positive relationship between emotional intelligence (self-motivation) and cognitive ability.

This also involves social skills like self-control, positivity, empathy, and sensitivity to other people, as well as the confidence and will to continue with something when it gets sticky (Elfenbein, 2013). Despite the less obvious lower order factor structure of EI, it was evident that ability-based assessments of EI constitute a group component

of cognitive abilities that fit within the “*Cattell-Horn-Carroll*” framework. Mestre, MacCann, Guil, and Roberts (2016) suggest that emotion regulation and evaluation theory could lead to a pivotal role in elucidating the diverse manners in which emotional intelligence processes find expression.. Therefore, the hypothesis was developed:

H 7: There is a positive relationship between emotional intelligence (self-regulation) and cognitive ability.

Until this study, research on the association between EI as a mental talent and other features of cognition, had been quite inconsistent (Adrian-Florin Buşu, 2020). Because EI is a sort of cognitive capacity, it has a more complex structure than any previously described model and hence may be investigated from a assortment of sides (Austin & Saklofske, 2005; Adrian-Florin Buşu, 2020). Wechsler went on to say that EI should be deliberated a subset of general intelligence because affective cognitive capacities play an important part in human intelligence. Therefore, the hypothesis was developed:

H 8: There is a positive relationship between emotional intelligence (relationship management) and cognitive ability.

According to Kirton (2003) one's inclination or tendency when applying problem-solving techniques is known as their cognitive style. According to Sadler-Smith and Badger (1998), one's behaviour might be influenced by their cognitive style while determining their professional goals and the steps they take to get there. This study

examines the efficacy of cognitive reflection (CR) in predicting academic and professional outcomes using four different samples. The findings demonstrated that CR was a reliable indicator of both occupational performance (measured by assessment centre ratings) and academic outcomes (measured by grades and exam marks) which knowledge of prospective change agents' qualities through extension education (Maertens, Michelson & Nourani, 2020). Therefore, the hypothesis was developed:

H 9: There is a positive relationship between cognitive ability and agricultural extension agents' job performance.

The relationships between CA, EI and job performance are examined in this study (Nguyen et al., 2019). The largest meta-analysis studies (Hunter, 1986; Hunter and Hunter, 1984; Levine et al., 1996) discovered that an individual's intelligence or CA is a good predictor of total work performance across a variety of populations and organizational situations. There is limited research on self-awareness of cognitive performance, such as its accuracy, source, and whether or not individuals can discriminate their performance across many cognitive domains (Schoo, Zandvoort, Biessels, Kappelle, Postma, 2013). Therefore, the hypothesis was developed:

H 10: Cognitive ability will mediate the relationship between emotional intelligence (self-awareness) and agricultural extension agents' job performance.

According to Webb et al. (2014), there is a connection between EI and cognitive manage only when there is an emotional element to the cognitive activity and when EI is measured using performance-based ability models. The relationship between emotion and cognition and the significance of emotional intelligence is demonstrated by research. This empowers individuals and their individuality while also helping society as a whole. Higher levels in self-controlling, self-organization, awareness, attentiveness, and motivation are reflected within every pyramidal tier (Drigas & Papoutsis, 2018). Therefore, the hypothesis was developed:

H 11: Cognitive ability will mediate the relationship between emotional intelligence (self-motivation) and agricultural extension agents' job performance.

Emotional management completely mediates the link between other emotional components and job performance (Adel Alferaih, 2015). It necessitates and activates higher cognitive skills such as attention, memory, control, reasoning, awareness, monitoring, and decision-making, according to Drigas and Papoutsis (2018). Emotion management occurs before emotional judgement of oneself and others, which promotes work performance (Nguyen et al., 2019). Thus, the hypothesis was developed:

H 12: Cognitive ability will mediate the relationship between emotional intelligence (self-regulation) and agricultural extension agents' job performance.

Due to various cognitive abilities that enable individuals to monitor an emotional state, an individual may have direct point of view in addition to their main emotion (Scheier & Carver, 1982). Scholars Mayer and Volanth (1985) have examined the correlation between emotion and judgment. Isen (1984) has suggested that individuals should attempt to control their emotional responses to enhance their own self-esteem and inspire them to help others. Applying meta-knowledge to socioemotional situations should give the opportunity to better one's emotional blunders and develop the potential of responding correctly in the future while preserving and fostering the connection (Kelly & Metcalfe, 2011). Therefore, the hypothesis was developed:

H 13: Cognitive ability will mediate the relationship between emotional intelligence (relationship management) and agricultural extension agents' job performance.

2.12 Summary

In conclusion, this chapter was being tried to tell by a variety of researchers on the literature review. It could therefore allowed the researcher to recognize each and every variable used by the above-mentioned scholars. Besides, researcher has applied the EI Ability Model throughout the studies. As stated, this chapter examined the link of emotional intelligence among employee's job performance as the cognitive ability as the mediator in Agro-based Industry, by using four (4) factors which were self-awareness, self-regulation, self-motivation and relationship management



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The methodology utilised for this research was covered in this chapter. The test methodology, unit of analysis, sample size, sampling procedures, measurement, data collecting, and data analysis that will be used in a particular agro-based industry are all addressed in discussion.

3.2 Research Design

The components of a study were integrated in a relatively logical way by a researcher using a variety of approaches and procedures in order to effectively address the research challenge. Here, an effective research design makes ensure that the information acquired enables a proper response towards the research problem. This study was conducted in quantitative. This was where the observations and conclusions were used to test and verify them. In addition, to produce generalizable knowledge on the subject, this method of analysis can be used. In short, normal quantitative methods should therefore include assessments, results recorded as numbers and closed-ended questionnaire surveys among employees at “*Department of Agriculture (DOA), Muda Agricultural Development Authority (MADA), Federal Agricultural Marketing Authority (FAMA), and Malaysian Agricultural Research and Development Institute (MARDI)*”, in Malaysia.

According to Abutabenjeh & Jaradat (2018) the research design is a configuration of the required collection and analysis of data requirements in a way that integrates importance for research purposes with reliability in the method anticipated by the researcher from the start to the completion of the project. Test architecture was conducted in the running of this study according to the MSCEIT and WLEIS (Hunter, 2022; Law et al., 2022) in which this was built from the ability EI model (Wong et al., 2004). Emotion utilization, emotion regulation, self-emotional evaluation, and other people's emotional appraisal are the four subscales on which this forced-choice test measures emotional intelligence (Hoxha & Zeqiraj, 2022). It is also cost-effective and has demonstrated accuracy and validity (Hunter, 2022; Law et al., 2022; Ngoc, Tuan & Takahashi, 2019). That was where the researcher presented a list of concerns that could be related to the variables that influence work performance that contribute to emotional intelligence.

To be clear, the “*Wong Law Emotional Intelligence Scale*” applies the Cascading Paradigm to (WLEIS) (Wong & Law 2002). This measure is simple to operationalize and has demonstrated cross-national invariance, particularly in Belgium and Singapore. However, the test was designed as a self-reported questionnaire, which might insufficient to assess competence caused by bias toward social desirableness. In the event of failure, respondents can overestimate their desired potential and blame other factors rather than their inability. An updated WLEIS cascading model, in which SEA and OEA are followed by emotion control, leads to significant impact on EI, while

at the same time finding a close association between four key aspects of EI in the job performance mentioned above (Nguyen et al., 2019)

The researcher also assures that the questions posed were clear and that it makes sense for the respondents to understand them more readily. In the other hand, preventing biased specification quest is the future gain of pre-specified test design by excluding any specification search.

In addition, to the extent that the aim can be accomplished, it is worth following default research design, particularly in places where the reported data appears to have effects on validity. Therefore, the associated experiments of previous researchers were used to help researchers gain reliable data and information.

3.3 Unit/Level of Analysis

As according to Hamidi (2005) the researcher indicates that the unit of study is the subject of an examination and, as a research subject, can be the man, community, item or context of social interaction, such as person or group of people activities. The analytical unit represents the rate of data accumulation collected during the follow-up analysis of the data.

For instance, if the problem statement deals on how to enhance the amount of motivation for staff in particular, then we would be interested in the actual employees of the organization and must to catch on what can be fixed to increase their performance. Meanwhile, Sekaran (2013) the unit or level of analysis is the degree of

cohesion of the evidence collected for another stage of data processing, while the inspection of subordinates and competence among supervisors is a good illustration of behaviours as the unit of analysis is the subordination of work ties. The SEA and OEA indicators will be used in this analysis, since they are the components of WLEIS in the Cascading Model.

Therefore, the evaluation unit was the staff referred in departments such as engineering, human resource and operation department in this research study at the Agro-based Industry, as it is for assessing the link of emotional intelligence on agriculture extension agent's job performance. This was according to (Shah et al., 2013) which stated the extension agent is the officers from numerous departments and agencies responsible in extension, marketing, financing, farmer associations, production, and so forth.

3.4 Sampling Framework

The sample unit list from which the sample is collected is the sampling frame, according to (Brown, 2010). It can be extremely large whether the population is geographic or global in nature. In order to select anyone in the group, frame is needed and they have equal opportunities for selection as the subject matter.

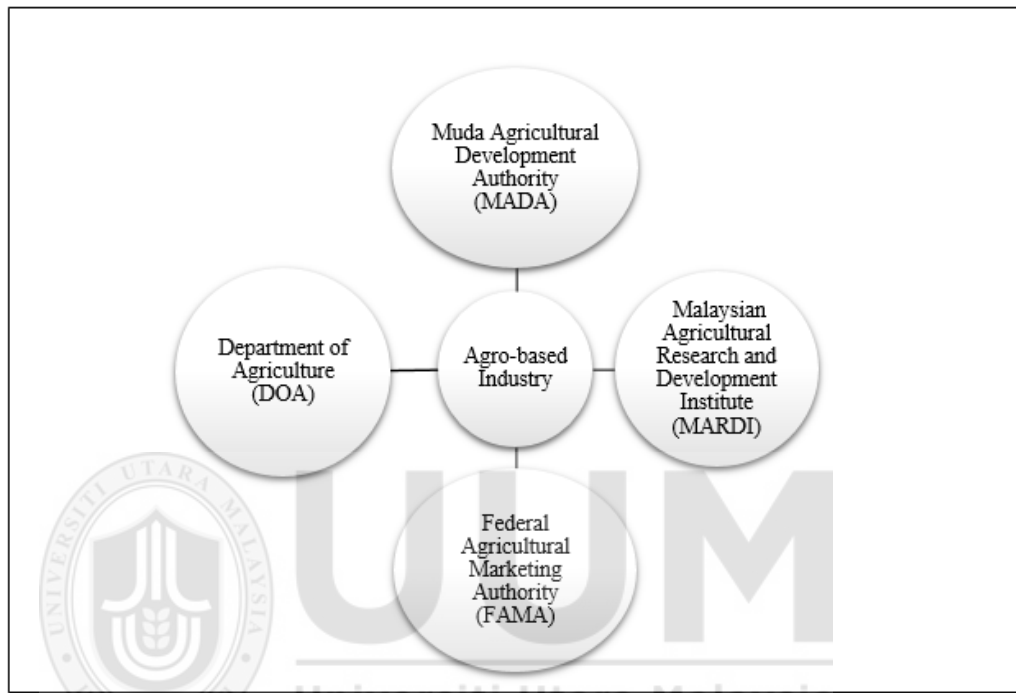


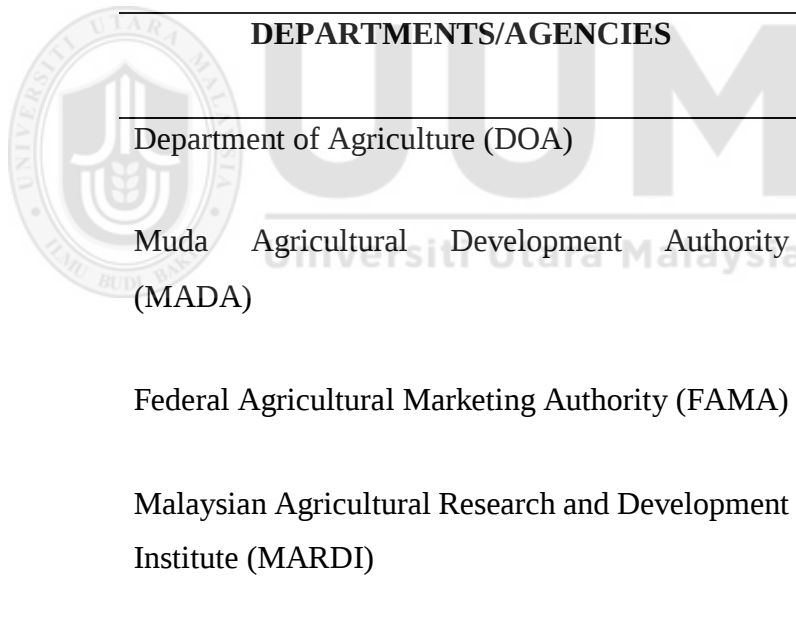
Figure 3.1 Scope of sampling framework

In this study, the researcher identifies the sampling frame from the employees from “*Department of Agriculture (DOA), Muda Agricultural Development Authority (MADA), Federal Agricultural Marketing Authority (FAMA), and Malaysian Agricultural Research and Development Institute (MARDI)*” in Malaysia. Employees were the respondents that extracted from various department including top management to the subordinates.

3.4.1 Population

Sekaran and Bougie (2010) state that the term "population" denotes the full set of people, things, or subjects that the researcher had to look into in order to get survey findings that relied on broad generalizations. In addition, Hanlon and Larget (2011) note that the population is mainly specific to persons or units of value, because there is no evidence exist for virtually all individuals in the population.

Table 3.1
Sample of Population



DEPARTMENTS/AGENCIES			
Department of Agriculture (DOA)			
Muda	Agricultural	Development	Authority
(MADA)			
Federal Agricultural Marketing Authority (FAMA)			
Malaysian Agricultural Research and Development Institute (MARDI)			

The aim population of the researcher throughout this analysis was the employees of “*Department of Agriculture (DOA), Muda Agricultural Development Authority (MADA), Federal Agricultural Marketing Authority (FAMA), and Malaysian Agricultural Research and Development Institute (MARDI)*” in Malaysia. As such, the

evaluation almost certain to see the correlation between emotional intelligence and agriculture extension agent's job performance for this analysis.

3.4.2 Selection of Respondent

In this research, the unit of analysis was the employees or extensionist at DOA, MADA, FAMA and MARDI. In which the executive and non-executive were selected in this study. To be brief, the term "executive" in the context of agriculture extension agents may sometimes refer to specific roles or positions within the broader framework of extension services.

Firstly, the respondents were selected according to their leadership and management roles. In some contexts, agriculture extension agents may occupy leadership or managerial positions within extension programs or projects. These roles might involve strategic planning, overseeing extension staff, and coordinating large-scale initiatives. While these positions may still be considered non-executive in a traditional sense, they can carry significant responsibility and influence over the direction and effectiveness of extension services (Davis et al., 2024). Beside, higher-level administrative functions was also one of the criteria when selecting the respondents where in organizations with a more complex structure, certain agriculture extension agents may take on higher-level administrative functions that include budget management, policy development, and strategic decision-making. In these cases, their roles might overlap with what is traditionally viewed as executive responsibilities, though they are not typically part of the top executive tier (Smith & Williams, 2023).

In addition, dual role situations were also considered in the selection of respondent. It sometimes, an individual may perform both field-based duties and higher-level strategic functions. For example, a senior extension agent might still engage directly with farmers while also managing programs and providing leadership within the extension office (Johnson et al., 2022).

In essence, while most agriculture extension agents are non-executive in the traditional sense of day-to-day operations and direct farmer interactions, some roles within extension organizations may involve executive-level responsibilities related to program management and strategic planning.

This was because they were concerned primarily in the development, formulation, and execution of government policies pertaining to agro-based enterprises. This was in line with the study stated that extension agents were representatives of many agricultural departments and agencies who oversaw production, farmer associations, extensions, marketing, financing, and other related areas (Hussain, 2021). This approach was also derived from past studies (Supramaniam & Singaravelloo, 2021; Yusuf et al. 2021). From this method, all of the extension agents at all level were studied to enhance the result of this study.

3.4.3 Sampling Technique

Sampling technique as according to Sekaran (2006,) clarified that It was clear why the survey was conducted rather than collecting information from all of the respondents since it would be nearly difficult to collect, test, or analyse information from all of the

aspects in research comprising hundreds of components in analytics. Although if desirable, it is due to it being costly.

There appear to be six various forms of probability sampling which are Simple random, Stratified random, Cluster sampling, Systematic sampling, Multi stage sampling (Bhardwaj, 2019).

Throughout this studies, researcher employed a combination of multistage cluster random sampling and stratified random sampling.

3.4.3.1 Determining sample size

Initially, for a multistage cluster sampling the regions were divided by scattered Malaysia into 4 (four) regions namely East, South, West, and North. This division can help ensure representation from different parts of the country.

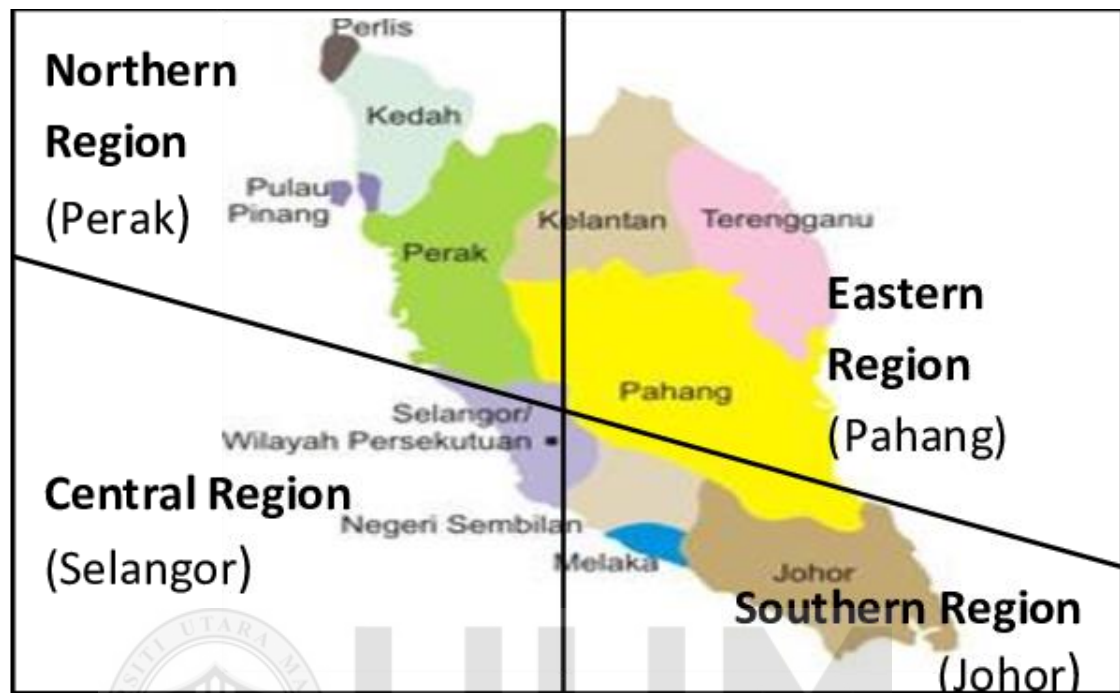


Figure 3.2 Regions of Malaysia

As showed in the above map, Northern regions were randomly selected among four regions. Therefore, Penang, Perak, Kedah, and Perlis were randomly selected.

Next, a cluster sampling within Northern Region were performed. It was where the states of Penang, Perak, Kedah, Perlis were selected as a cluster. Then, state of Kedah was randomly selected as the final Cluster from the Northern region. This process exemplifies a rigorous multistage cluster sampling method, ensuring that the selection of Kedah was random and not influenced by purposive sampling (Hankin, Mohr, & Newman, 2019). Therefore, state of Kedah was the cluster focused in this study to examine the agricultural extension agent performance.

Within the Northern region, another round of random selection was performed, treating the states of Penang, Perak, Kedah, and Perlis as clusters. Finally, among these clusters, Kedah was randomly selected.

Moreover, stratified sampling technique can be defined as stratified sampling is the process of dividing the population into groups, or strata, and then selecting a sample separately from each stratum (Singh & Mangat, 1996). In this study, researchers split a population into homogeneous subpopulations called strata (plural of stratum) depending on particular traits (e.g., gender identity, location, level of position and etc.) if the sample is selected from each stratum in a stratified sample. Every person in the population under study ought to belong to precisely one strata.

Therefore, sampling within Kedah's state was taken into account in stratified sampling. Table 3.2 showed all agricultural agencies in Kedah involved.

Table 3.2
Kedah's State Agriculture Agencies

Agencies	Number of agricultural extension agents
Department of Agriculture (DOA)	225
Department of Veterinary Services (DVS)	174
Department of Fisheries Malaysia (DOF)	465
Malaysian Agricultural Research and Development Institute (MARDI)	115
Farmers' Organization Authority (LPP)	322
Federal Agricultural Marketing Authority (FAMA)	125
Fisheries Development Authority	452
Muda Agricultural Development Authority (MADA)	279
Malaysian Pineapple Industry Board (MPIB)	385

In order to calculate statistical measures for every subpopulation, researcher use a variety of probability sampling techniques, including simple random sampling or cluster sampling, to select sample from each stratum.

Stratified sampling is applied to ensure that, in cases where the population's characteristics differ, each attribute is appropriately represented in the sample. By doing this, the study's generalizability and validity are improved and research biases including undercoverage bias can be prevented.

In the context of this study, where the agencies of Agro-based situated in Kedah are chosen out of four other parts of the Northern region (Perlis, Perak, Pulau Pinang), and employees from DOA, MADA, FAMA, and MARDI are investigated across non-executive and executive roles, stratified sampling can be particularly beneficial.

By ensuring that both non-executive and executive employees from each agency (DOA, MADA, FAMA, and MARDI) are included, the study captures the diversity within the workforce. This approach ensures that the experiences and perspectives of different employee levels are represented, thereby reducing the risk of undercoverage bias (BMC Public Health, 2020). Stratified sampling allows for more accurate and precise estimates by minimizing variability within each stratum. For instance, separating non-executive and executive employees into different strata ensures that each group's specific characteristics are considered, leading to more reliable conclusions (Singh & Masuku, 2020). By dividing the population into strata based on their roles (executive and non-executive) and then randomly sampling within these

strata, the study ensures that each subgroup is proportionally represented. This method reduces the likelihood of research bias and enhances the validity of the findings, as shown in studies on sampling methodologies (Acharya et al., 2020).

In this study, the researcher would first stratify the population into groups based on agency (DOA, MADA, FAMA, MARDI) and role (executive, non-executive). Then, you would randomly select participants from each stratum. For example, if there are 100 non-executive and 50 executive employees in DOA, you would randomly select a proportional number from each subgroup. This ensures that the sample size within each stratum reflects the actual distribution in the population, avoiding over- or under-representation.

These comparisons highlight why MADA, DOA, FAMA, and MARDI are more suitable to this study in ensuring that the findings are relevant, comprehensive, and impactful within the agricultural sector.

Choosing MADA, DOA, FAMA, and MARDI over other agencies offers specific advantages in this study. The Department of Agriculture (DOA) provides direct relevance to agricultural extension due to its focus on crop production and plant health, which are central to this research (Alkaff & Fattah, 2021). In contrast, the Department of Veterinary Services (DVS) is more specialized in veterinary care, making its focus less applicable to agricultural extension where crop production expertise is crucial.

Similarly, the Federal Agricultural Marketing Authority (FAMA) is more pertinent compared to the Department of Fisheries Malaysia (DOF). FAMA's role in agricultural marketing addresses market demands and farmer needs, which is vital for understanding how EI elements impacts marketing strategies within agricultural extension services' job performance (Smith, 2020). The DOF's focus on fisheries does not align as closely with the broader agricultural marketing context necessary for this study besides, most the extension agents in DOF spend their time more in the ocean compared to the FAMA where their extension agents are reachable.

Muda Agricultural Development Authority (MADA) stands out for its specific regional focus compared to the Farmers' Organization Authority (LPP). MADA's emphasis on regional agricultural development provides a targeted context for studying EI elements in a defined agricultural area, allowing for more impactful policy recommendations and interventions (Rahman, 2022). LPP's broader role could dilute the focus needed for a specific regional analysis.

The Malaysian Agricultural Research and Development Institute (MARDI) is preferred over the Fisheries Development Authority due to its alignment with agricultural research and development. MARDI's involvement in translating research into practical applications is crucial for understanding how EI elements affects the adoption and dissemination of agricultural innovations (Tan & Lim, 2020). The Fisheries Development Authority's focus on fisheries may not provide the relevant insights needed for agricultural extension work.

Finally, FAMA's broader applicability across various agricultural products makes it a better choice compared to the Malaysian Pineapple Industry Board (MPIB). FAMA's focus on agricultural marketing encompasses a wider range of products, offering a comprehensive view of how EI elements impacts marketing efforts, whereas MPIB's specific focus on pineapples limits the generalizability of findings (Smith, 2020).

These comparisons highlight why MADA, DOA, FAMA, and MARDI are more suitable for studying EI elements among agricultural extension agents' job performance, ensuring that findings are relevant, comprehensive, and impactful within the agricultural sector.

The researcher therefore gathered a sample of participants from employees at the designated department and agencies, including those in each level. The research was comprised findings from the relevant strata as a consequence of this technique. Making ensuring the important subgroup is represented in the sample is the key to employing this sampling strategy.

A sample size is to be known as the respondent which is a subset of the population (Chetty, 2012). It is where its composed primarily of some of the individuals picked from it. To be cleared, the sample would include certain, but not all, components of the population. In this study, researcher will use a method adopted from Bartlett et al. (2001) as it was designed as relatively easy to be applied for. The Bartlett's test of sphericity determines if the correlation matrix is an identity matrix and is used to

determine whether there is duplication among the variables and it was mentioned in a study of (Shibli et al., 2021).

Below is the formula adopted from Bartlett et al. (2001).

$$n = \frac{p(100-p)z^2}{E^2}$$

n is the required sample size

p is the percentage occurrence of a state or condition

E is the percentage maximum error required

z is the value corresponding to level of confidence required

Figure 3.3 Bartlett's Formula

Bartlett's formula, introduced in 2001, remains a widely recognized method for determining sample size due to its ability to handle complex study designs, including stratified and cluster sampling (Bartlett, Kotrlik, & Higgins, 2020). This method is particularly valuable for studies involving multiple strata, such as research examining various employee groups across different agencies (DOA, MADA, FAMA, and MARDI) in Kedah. By ensuring adequate representation of each stratum, Bartlett's formula helps reduce bias and enhance the generalizability in the finding. This precision is crucial for producing reliable and valid results given the complexity of study design (Sharma, 2022). Furthermore, Bartlett's formula's adaptability allows in tailoring the sample size calculation to accommodate the specific needs of the research,

ensuring that the sample accurately reflects the diverse employee roles and agencies involved (Sharma, 2022).

In this case, confidence level of 95% and margin of error 5% were applied as recommended where in the social and management research a confidence level of 95% and 5% margin of error were acceptable (Salazar & Holbrook, 2020).

Table 3.3
Populations and sample size of the studies

DEPARTMENTS/AGENCIES		POPULATION	SAMPLE SIZE
Department of Agriculture (DOA)		225	143
Muda Agricultural Development Authority (MADA)		279	163
Federal Agricultural Marketing Authority (FAMA)		125	95
Malaysian Agricultural Research and Development Institute (MARDI)		115	90
Total		714	491

The data were established by the researcher based on the information received from the selected departments and agencies.

Below were the proportion for each respective sample size from every agencies chosen in this study (DOA, MADA, FAMA, and MARDI).

Table 3.4
Proportion of sample size.

Agencies	Proportion
DOA	$225 / 714 = 0.315$
MADA	$279 / 714 = 0.390$
FAMA	$125 / 714 = 0.175$
MARDI	$115 / 714 = 0.161$

Next, the sample size for each stratum were calculated and determined.

Table 3.5
Sample Size for Each Stratum

Agencies	Sample size
DOA	$0.315 * (491) = 154$
MADA	$0.390 * (491) = 191$
FAMA	$0.175 * (491) = 85$
MARDI	$0.161 * (491) = 79$
Total	509

Finally, the respondents were randomly selected from each stratum (DOA, MADA, FAMA, and MARDI).

Thus, researcher has derived the conclusions that will be relevant to the people participating by analyzing the data obtained. The segmentation of the population chosen by the researcher was made up of employees from “*Department of Agriculture (DOA), Lembaga Kemajuan Pertanian Muda (MADA), Lembaga Pemasaran Pertanian Persekutuan (FAMA), and Institut Penyelidikan dan Kemajuan Pertanian Malaysia (MARDI)*”, of 509 extension agents out of 714 extension agents.

3.4.4 Scales of Measurement

A scale is a technique or procedure for distinguishing individuals based on how the variables in the Bryman and Bell (2011) study differ from one another. Scales are classified into four types, nominal, ordinal, interval, and ratio. In addition, measuring scales are employed to identify and quantify variables.

3.4.4.1 Nominal Scale

According to Kumar (2000), a nominal scale is a classification of individuals, things, behaviors constructed on relevant, mutual qualities or characteristics. These people, things, or replies are distributed into subgroups, to a specific goal. Because there are no statistical measures for 'sex' and other basic factors, the aforementioned scale has been widely utilized to characterize them.

Gender will always be male or female, even if other numerical values, such as 100% male, can never be attributed to it. The nominal or rating scale appears to be the most basic scale in statistics and research. The basic values of this scale specify only the

variables being studied. The variables' statistical values are not provided by the scale in question. Variables are only compared qualitatively in terms of these distinguishing features. All of these figures serve as simple class descriptors that have no intrinsic meaning. Thus, nominal scales include a specific category and respondents' overall awareness.

3.4.4.2 Ordinal Scale

An ordinal scale is a system that arranges items, entities, or places based on size in a predetermined order, such as a participant's academic standing as a freshman, sophomore, junior, or senior in college (Zikmund , 2009) . Researcher may be using most statistics related to nominal variables for the analysis of ordinal variables. In conjunction with nominal measurements, the ordinal variables indicate a statistical correlation between its values. This is because, medians and quartils are suitable descriptive figures whereas the Spearman Rank-order correlation is suitable to inferential statistic. The said scale of measurement has assisted researcher to find out the elevated level, level of education and level of experience among the agricultural extension agents from “*Department of Agriculture (DOA), Muda Agricultural Development Authority (MADA), Federal Agricultural Marketing Authority (FAMA), and Malaysian Agricultural Research and Development Institute (MARDI)*”.

3.4.4.3 Interval Scale

The definition of an interval scale, according to Zikmund (2009), is a scale that arranges things, people, or locations in a certain order based on a level, but it also divides the systematic arrangement into units of corresponding intervals, such as thermometers. However, there isn't a single natural zero like in the package. The temperature scales used for measuring time, for example, are Celsius and Fahrenheit.

To be more clearer, the disparity between the ordinal and the interval scales would be that it uses either a normal unit of measurement or a metric as for example in a case of temperature, the difference between 101°C and 111°C is assumed to be equal to the difference between 19°C and 29°C. Researchers can carry out simple mathematical operations for ordinal calculations, including addition and subtraction, using equidistant variances between values. As a result, the variables operationalized at the interval rate are the suitable quantitative.

3.5 Operationalization

An operational was how the researcher decide to measure the variables in the study (variable = anything that can be measured) (Slife, Wright & Yanchar, 2016). Throughout this research, the operationalization was divided into seven (7) variables as follows:

3.5.1 Agriculture Extension Agents' Job Performance

Job Performance itself is usually measured through either subjective rating scales or objective performance outcomes, such as sales amounts, production numbers and many more (Campbell, 1990; Robles-Granda et al., 2021).

Meanwhile, agricultural extension empowerment that may work based on their duty is becoming increasingly crucial to seek (Zainal & Prakaso, 2019). Extension employees in agricultural extension activities collaborate to develop long-term organisational goals and plan how to attain them while still running the organisation (Dann, 2004). As mentioned earlier, the efficiency of extension services was also strongly depended on qualified extension agents who understood and were proficient in their jobs (Saifan et al., 2021).

Table 3.6
Operationalization of Agriculture Extension Agents' Job Performance

Dimension	Items	Sources
Job performance	1. I have an appropriate understanding of job description in my organization.	Adapted from Daus & Ashkanasy (2020)
	2. I accomplish my work within a set time frame.	Adapted from Babic & Adams (2021)
	3. I ensure that my work is done to a high quality standard.	Adapted from Jansen & Lammers (2023)
	4. I am able to perform under pressure.	Adapted from Allen & Van Der Weele (2022)
	5. I contribute to the overall development of the organization.	Adapted from Griffin & Neal (2020)

3.5.2 Emotional intelligence

Emotional Intelligence is a collection of experiences that include self-awareness, self-motivation, self-regulation, and relationship management (Goleman, 1996). This variable was examined based on the responses of respondents to a questionnaire that asked whether employees can regulate their emotions when handling their tasks and job so that they can attain the organization's aim. The questionnaire for EI dimension are as below.

3.5.2.1 Self-awareness

The capacity to recognise, trace, and label an emotion as it occurs is referred to as self-awareness (Goleman, 1995; Arbatani & Mousavi, 2012). It might be a receptivity to honest feedback and an accurate self-evaluation.

Table 3.7
Operationalization of EI dimension (self-awareness)

Dimension	Items	Sources
Self-awareness	1. I can frequently define my feelings.	Adapted from Houghton & Neff (2021)
	2. I know my feelings towards other people.	Adapted from Caruso & Salovey (2022)
	3. I know my feelings towards different situations.	Adapted from Kunkel & Bell (2019)
	4. I can confidently make decisions.	Adapted from Becker & Klimoski (2021)
	5. I can understand and control my feelings as a whole.	Adapted from McCoy & Moser (2024)

3.5.2.2 Self-motivation

Self-motivation may be defined as the ability to stay positive and optimistic in the face of adversity and failure (Goleman, 1995; Arbatani & Mousavi, 2012). It is where accomplishment orientation, dedication, and excitement will be examined.

Table 3.8
Operationalization of EI dimension (self-motivation)

Dimension	Items	Sources
Self-motivation	1. I am able to work hard even when the tasks are difficult.	Adapted from Hayat & Ali (2019)
	2. I am always excited to do my job.	Adapted from Kooij & De Lange (2023)
	3. I am willing to work hard although the work is not interesting.	Adapted from Van Veldhoven & Broersen (2022)
	4. I am willing to take on any task.	Adapted from Wright & Bonett (2018)
	5. I won't be tired of doing the job that I'm interested in.	Adapted from Parker & Axtell (2020)

3.5.2.3 Self-regulation

Self-regulation is the ability to keep emotions in check and effectively regulate upsetting emotions (Goleman, 1995; Arbatani & Mousavi, 2012). It may be measured by the employees' self-control, flexibility, and innovativeness at work.

Table 3.9
Operationalization of EI dimension (self-regulation)

Dimension	Items	Sources
Self-regulation	1. I know when to step away if having an argument with a colleague.	Adapted from Klein & Kluemper (2021)
	2. I am able to act calmly even though I am angry.	Adapted from Kinnunen & Mauno (2019)
	3. I am able to control my feelings even under stress.	Adapted from Liu & Li (2022)
	4. I feel guilty if I cannot perform the task properly.	Adapted from Xu & Chen (2024)
	5. I can understand and control my feelings as a whole.	Adapted from Babalola & Ogunleye (2021)

3.5.2.4 Relationship management

Relationship management may be observed in the ability to manage relationships and establish rapport and networks (Goleman, 1995; Arbatani & Mousavi, 2012). It is where will the leadership, communication, collaboration, and conflict management be apprehended.

Table 3.10
Operationalization of EI dimension (relationship management)

Dimension	Items	Sources
Relationship management	1. I am able to give a clear view to others.	Adapted from Wong & Law (2021)
	2. I am able to build friendly relationships with anyone.	Adapted from Kim & Park (2022)

3. I am able to work with anyone.	Adapted from Li & Zhang (2023)
4. I always share information with my colleagues when working together.	Adapted from Spector & Fox (2019)
5. I am able to accomplish networking with excellent social skills.	Adapted from Seibert & Kraimer (2020)

3.5.3 Cognitive Ability

Cognitive ability is attributed to objective measurement or a data-driven approach, with the optimal operational accuracy for cognitive ability seen in positions with high levels of difficulty (Hunter, 1986; Hunter and Hunter, 1984). The ability model puts a lot of emphasis on an individual's cognitive capabilities in using input from emotions in facilitate cognitive processing (Berrocal & Checa, 2016). This variable will also be assessed in accordance with the selection criteria for respondents in the questionnaire, which asks whether or not the employee wants to give their all to their job and whether or not it is crucial to put in the necessary effort to meet the goals set forth by the organization.

Table 3.11
Operationalization of EI dimension (cognitive ability)

Dimension	Items	Sources
Relationship management	1. I am able to separate between main issues and side issues at work.	Adapted from McCabe & Castel (2019)

2. I know how to set the right priorities.	Adapted from Cho & Lee (2021)
3. I can come up with creative solutions to problems that arise.	Adapted from Rattan & Dweck (2020)
4. I keep looking for new challenges in my job.	Adapted from Callahan & Ellison (2023)
5. I actively look for ways to improve my job performance at work.	Adapted from Hu & Wang (2022)

3.6 Measurement of Items and Scales

The researcher measured the magnitude of each variables by using Likert-Scale Developed in 1932 by Rensis Likert. Likert's ground-breaking research enhanced survey techniques and produced a potent instrument for gauging attitudes and opinions.

Since then, the psychometric rating scale has become crucial to the design of surveys (Sullivan & Artino, 2013). It allows researchers to measure individual points of view on various topics, from political beliefs to customer satisfaction (Johnson, 2014).

The scale divided into five (5) optional answers: 1) = Strongly Disagree, 2) = Disagree, 3) = Neutral, 4) = Agree and 5) Strongly Agree. As in Table 3.12 below, the conceptual calculation was shown below.

Table 3.12
Concept of Measurement

No.	Conceptualization		Operationalization	Scale Measurement
	Concept	Definition		
1.	Dv Agriculture extension agents' job performance	Agricultural Extension empowerment which can work based on their responsibility become important to be pursued (Zainal & Prakaso, 2019). Whereas, job performance is the employees who engage in or contribute scalable actions, behaviours, and accomplishments that are connected to and promote towards organisational goals (Viswesvaran,2000).	1. I have an appropriate understanding of job description in my organization. (This item develop to capture employee's responsibility in performing tasks). 2. I accomplish my work within a set time frame. (This item design to apprehend positive time management to accomplish tasks). 3. I ensure that my work done in high quality of standard. (This item established to know employee's positive execution in performing tasks).	Interval 5-Strongly Agree 4 – Agree 3 – Neutral 2 – Disagree 1 – Strongly Disagree

			4. I able to perform under pressure. (This item is invent to capture employee's task management) 5. I contribute to the overall development of the organization. (This item is develop to explore employee's overall performance accomplishing works).	
2.	Mediator Cognitive Ability	Cognitive ability is a “mental capability that involves the ability to reason, plan, solve problems, think abstractly, comprehend complex ideas, learn quickly and learn from experience” (Gottfredson, 1997)	1. I am able to separate between main issues and side issues at work. (This item develop to apprehend employee's positive mental psychology at work). 2. I know how to set the right of priorities. (This item established to capture a good planning to prioritize tasks).	Interval 5-Strongly Agree 4 – Agree 3 – Neutral 2 – Disagree 1 – Strongly

			3. I can come out with creative solutions on problems arise. (This item is invent to see employee's smart problem solving). 4. I keep looking on new challenges in my job. (This item design to capture employee's positive desire to improve themselves). 5. I actively look for ways to improve my job performances at work. (This item established to explore employee's ability to control things at works).	
3.	Iv Self-awareness	Having a deep understanding of one's emotions, strengths,	1. I can frequently define my feelings. (This item develop to capture employee's positive inner feeling at work).	Interval 5-Strongly Agree 4 – Agree 3 – Neutral

		weaknesses, needs, and drives., (Rubino and Freshman, 2002)	2. I know my feelings towards other people. (This item establish to know employee's good thoughts about others). 3. I know my feelings towards different situations. (This item design to apprehend employee's positive feeling in order to recognize the situation according to state of matter at work). 4. I can confidently making decisions. (This item invent to capture employee's positive and firm decision making skill to solve issue while performing task). 5. I can understand and control my feelings as a whole.	2 – Disagree 1 – Strongly
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			(This item design to explore employee's awareness at work).	
4.	Iv Self-regulation	The ability to self-regulate may have advantage in the course of an individual's mental life especially within the crucial context, (Luke, 2006).	1. I know when to step away if having an argument with a colleague. (This item establish to see employee's smart move in handling situation). 2. I am able to act calmly even though I was angry. (This item design to capture employee's in positively control anger while having issue at work). 3. I am able to control my feelings even under stress. (This item invent to apprehend how employee tackle to work under pressure at work positively).	Interval 5-Strongly Agree 4 – Agree 3 – Neutral 2 – Disagree 1 – Strongly Disagree

			4. I feel guilty if I cannot perform the task properly. (This item develop to capture how employee's mentally open towards mistakes done during work). 5. I can understand and control my feelings as a whole. (This item design to explore employee's positive way to regulate feeling while performing work).	
5.	Iv Self-motivation	It can be defined as driven to achieve, being passionate over profession and enjoying challenges. Gorji et al., (2017)	1. I am able to work hard even when the tasks are difficult. (This item establish to capture employee's positive effort in performing their duties). 2. I am always excited to do my job. (This item develop to know employee's positive	Interval 5-Strongly Agree 4 – Agree 3 – Neutral 2 – Disagree 1 – Strongly

			enthusiasm to perform tasks). 3. I am willing to work hard although the work is not interesting. (This item invent to apprehend employee's positive passion in performing tasks). 4. I am willing to take on any task. (This item design to capture employee's good commitment at work). 5. I won't be tired of doing the job that I'm interested in. (This item establish to explore employee's positive motivation in performing tasks).	
6.	Iv Relationship management	Relationship management is a persons' reaction to the people around which it is important	1. I am able to give a clear view to others. (This item develop to apprehend employee's	Interval 5-Strongly Agree

		because employees can build good relationships, share information, and accept others' views, (Argan et.al, 2016)	positive openness with others at work). 2. I am able to build friendly relationships with anyone. (This item design to capture employee's good social skill at work). 3. I am able to work with anyone. (This item invent to know employee's positive cooperation at work). 4. I always share information with my colleagues when working together. (This item establish to capture employee's positive collaboration in accomplishing goals at work). 5. I am able to accomplish networkers with	4 – Agree 3 – Neutral 2 – Disagree 1 – Strongly
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			excellent social skills. (This item develop to explore employee's positive social relationship at work).	
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3.7 Data Collection

Through this studies, the researcher was up to use questionnaire application method. It was where the data collection mechanism between researcher and respondents is reachable through the Google Form e-questionnaire. This method was suitable as according to the new norms since Covid-19 outbreak. It is also less expensive and reliable. In addition, the questionnaire was send directly to the targeted respondents. Beforehand, the questionnaire were be pre-tested in order to guarantee and clarify the consistency of each question.

The questionnaire then been transforms into e-form via Google e-questionnaire. To ensure all of the candidates of the respondent are able to understand the questions, the researcher provided it on both English and Malay languages.

To verify the translation of a survey from English to Malay, several steps are essential. First, having the translation reviewed by bilingual experts with expertise in both languages and subject matter ensures linguistic and contextual accuracy. The researcher referred to Guru Bahasa from secondary school. Besides, back-translation, where the Malay version is translated back into English by a different translator, helps identify discrepancies. Additionally, conducting a pilot test with a sample of the target population provides feedback on the survey's clarity and comprehensibility. These methods collectively ensure that the translated survey maintains the integrity and effectiveness of the original version.

The set of questionnaire was provided in the Appendix B.

In addition, as the questionnaire was only meant for educational purposes, the researcher has ensured that every information given within is maintained in complete confidentiality. In this study, the questionnaire can still be checked by the interviewer or answered directly by the respondents. Moreover, the questionnaire was delivered directly to each respondent. In order to look for people who are differ from one dominating characteristic at one point in time, researcher has also utilised cross-sectional analysis. Respondents who differ on a key characteristic but are identical in other qualities has been chosen to collect data. This approach is used to isolate the effect of the key characteristic on the study's outcomes (Fink, 2021). By ensuring that all other qualities are similar among respondents, the researcher can more accurately assess how the differing key characteristic influences the results. This method enhances the validity of the findings by controlling for confounding variables that could affect the analysis (Fink, 2021).

The questionnaires have been distributed to the targeted respondent after getting the approval from the person in charged from every agency studied. The link of Google e-form was generated and shared to the person in charged. They then distributed it to the respondents through e-mails and group WhatsApp consisting of the agriculture extension agents. In order of getting it responsive, researcher continuously checked the updates of the numbers of the response data and get back to the person in charged to update the number of responses. They then will remind the targeted respondents to participates in the survey until it reaches the most maximum responses and satisfied.

3.7.1 Ethical Clearance

The involved agencies (DOA, MADA, FAMA, and MARDI) in this studies were reached out professionally and formally. The researcher prepared letters to each respective agencies with supervisors and school endorsement. In order to make sure those agencies involved noticed, the researcher followed up once a week by phone call and meet up if requires. As in the case of MADA, the researcher has been asked to meet up and presenting the fundamental of the studies and the questionnaire to the board of meeting. Only after that the approval was been given. Meanwhile, others agencies (DOA, FAMA, and MARDI) accepted the request through e-mail and phone call.

In order to get the data for the analysis, a set of questionnaire has been set up. All of the items in the questionnaire were adapted and adopted from previous study. This has encountered their result of analysis had recorded a reliable result.

3.8 Data Analysis

In this analysis, the researcher used the SPSS version of 25.0 descriptive statistic, in which it demands the transformation of raw data into a form which was got in detail. The translations of the questionnaire were read in twice to avoid missing data and to get an interpretation and review of the information recorded. There were four types of data analysis which established to be used in determining descriptive analysis, correlation, regression, and Structural Equation Modelling (SEM) are all methods for determining the strength of the link between variables.

3.8.1 Descriptive Analysis

Descriptive evaluation will be employed in this study since it is thought to be capable of describing the data and information in an appropriate manner. This is because the linkage between the variables will be defined by the survey or the target population. The initial stage of analysis was the computation of descriptive statistics. It also includes nominal, ordinal, interval, and ratio variable types, as well as frequency, central inclination, dispersion or variance, and location measurements. In order to make it more clearer, the researcher can use chart visualization to enhance the evaluation of data from a descriptive study because it believes that the graph can defined the shape, the histogram, the bar chart and the pie chart whereas the data frequency or percentage can be found in the table provided.

3.8.2 Correlation

The researchers used correlation as an observational tool to illustrate the strength of the hypothesis. Correlations are defined to assess the amount to which differences in feature meaning are correlated with fluctuations in several other attributes (Schober, Boer & Schwarte, 2018). It is where Spearman Rank Correlation and Pearson Product Moment Correlation are two forms of correlation mentioned (Schober, Boer & Schwarte, 2018).

In this analysis, the researcher has determined the link of emotional intelligence on agriculture extension agents's job performance in Agro-based Industry, between self-awareness, self-motivation, self-regulation and relationship management.

3.8.3 Regressions

The researcher has also intended to strive for regression as part of a data retrieval approach that can be used for this analysis. Besides, the researcher wants to define a connection that only has one dependent variable and one or two independent factors. In order to examine the correlation between the two variables, the study's findings must be less than 0.05, and only after the data has been reviewed will they be examined in the next phase (Alexandrov, Svarnik, Znamenskaya, Kolbeneva, Arutyunova, Krylov, Bulava & Feldman, 2020). Regression is typically used to assess the independent variable has the greatest effect on dependent variables.

Through this analysis, study sought to ascertain the variables underscore in the study if self-awareness, self-motivation, self-regulation and relationship management are associated with emotional intelligence among employees, that would have a significant effect on the dependent variable of job performance at Agro-based Industry. The table below shows the study of the data to be used on the research question (RQ) and the research goal (RO).

3.8.4 Structural Equation Modelling (SEM)

The structural equation modelling (SEM) is a theory-driven data analysis technique for testing a priori established hypotheses concerning causal relationships between measured variables (Mueller & Hancock, 2018). There are two types of SEM which is CB-SEM and PLS-SEM. In this study, CB-SEM has also been performed for three reason. First, it helps in the analysis of theories by evaluating the relationship between

external and endogenous factors. Furthermore, CB-SEM is helpful for complex multivariate analysis of data. Third, it does not impose stringent requirements for sample size and data normality (Iqbal et al., 2022). In addition, if the research objective is theory testing and confirmation, then the appropriate method is CB-SEM (Dash & Paul 2021). Table 3.13 below showed the features comparison between CB-SEM and PLS-SEM which has been used as an indicator for this study.

Table 3.13
Summary of Comparison between CB-SEM and PLS-SEM

Feature	CB-SEM (Covariance-Based SEM)	PLS-SEM (Partial Least Squares SEM)
Objective	To confirm theory and test hypotheses (Kline, 2023; Schumacker & Lomax, 2018)	To predict and explore relationships (Hair, Hult, Ringle, & Sarstedt, 2021; Wilson & Henseler, 2019)
Modeling Approach	Confirmatory (testing a theory) (Kline, 2023)	Exploratory (building a theory) (Hair et al., 2021)
Data Requirements	Requires large sample sizes (Schumacker & Lomax, 2018)	Suitable for small to medium sample sizes (Hair et al., 2021)
Minimum Sample Size	Generally recommended minimum of 200-500 (Kline, 2023)	Can be effective with sample sizes as small as 50-100 (Hair et al., 2021)
Maximum Sample Size	Not strictly limited, but larger samples are preferred for more reliable results (Schumacker & Lomax, 2018)	Effective with larger sample sizes, although diminishing returns may occur beyond 500-1000 (Wilson & Henseler, 2019)

Distribution Assumptions	Assumes multivariate normality (Kline, 2023)	Less strict distribution assumptions (Wilson & Henseler, 2019)
Estimation Method	Maximum Likelihood Estimation (MLE) (Kline, 2023)	Non-parametric methods like PLS-Algorithm (Hair et al., 2021)
Complexity Handling	Handles complex models with multiple constructs (Schumacker & Lomax, 2018)	Effective for complex models but with lower complexity (Wilson & Henseler, 2019)
Model Fit Assessment	Focus on goodness-of-fit indices (e.g., CFI, TLI) (Kline, 2023)	Focus on path coefficients and R ² values (Hair et al., 2021)
Flexibility	Less flexible with model adjustments (Schumacker & Lomax, 2018)	Highly flexible and adaptable (Wilson & Henseler, 2019)
Applications	Mainly used in theory testing and confirmatory research (Kline, 2023; Schumacker & Lomax, 2018)	Often used in exploratory research and prediction tasks (Hair et al., 2021; Wilson & Henseler, 2019)
Strengths	Robust with confirmatory analysis, handles measurement errors (Kline, 2023)	Useful for theory development, less stringent requirements (Hair et al., 2021)
Limitations	Requires large samples and strict assumptions (Schumacker & Lomax, 2018)	Less rigorous in fit indices, can overestimate path coefficients (Wilson & Henseler, 2019)
Relevance to Study	CB-SEM is suitable for this study as it focuses on theory testing and confirmatory analysis. Given this study emphasis on examining the relationship between self-awareness and job performance, CB-SEM allows to confirm theoretical constructs and assess model fit with a high degree of rigor (Kline, 2023;	PLS-SEM could also be considered for exploratory research, but CB-SEM's strengths in confirmatory analysis align more closely with the objectives of your study.

	Schumacker & Lomax, 2018). With a sample size of 509, which is within the recommended range for CB-SEM, it provides a robust basis for confirmatory analysis, ensuring reliable results and validation of theoretical models.	
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Table 3.14
Data Analysis On the Research Question (RQ) and Research Objective (RO)

Variables	Research Question (RQ)	Research Objective (RO)	Data Analysis
DV	Do EI (self-awareness, self-regulation, self-motivation and relationship management) has an effect to agriculture extension agents' job performance in Malaysia Agro-based industries?	To investigate the effect of EI (self-awareness, self-regulation, self-motivation and relationship management) towards agriculture extension agents' job performance in Malaysia Agro-based industries	Descriptive CB-SEM
IV 1	Do EI (self-awareness, self-regulation, self-motivation and relationship management) has an effect to agriculture extension agents' cognitive ability in Malaysia Agro-based industries?	To examine the EI (self-awareness, self-regulation, self-motivation and relationship management) towards agriculture extension agents' cognitive ability in Malaysia Agro-based industries.	CB-SEM

IV 2	Do agriculture extension agents' cognitive ability has an effect to agriculture extension agents' job performance in Malaysia Agro-based industries?	To examine the effect of cognitive ability on job performance among agriculture extension agents in the Malaysia Agro-based industries.	CB-SEM
IV 3	Do agriculture extension agents' cognitive ability mediates the relationship between the EI (self-awareness, self-regulation, self-motivation and relationship management) and agricultural extension agents' job performance in Malaysia Agro-based industries?	To investigate mediating role of cognitive ability on the relationship between EI (self-awareness, self-regulation, self-motivation and relationship management) and job performance of agriculture extension agents in the Malaysia agro-based industries.	CB-SEM

3.8.5 Reflective and Formative Measure

Subject on the nature of the construct being measured, a measurement model can either consist exclusively of reflective indicators, formative indicators, or a combination of both (Fornell & Bookstein, 1982). Formative indicators, also referred to as cause or formative indicators, are those that form or define the latent construct through a linear combination of these indicators (Hair et al., 2019). In contrast, reflective indicators, known as effect indicators, are used to reflect variations in the underlying construct (Hair et al., 2019). According to Bollen and Lennox (1991) and Diamantopoulos, Riefler, and Roth (2008), reflective constructs are modeled with indicators that are

assumed to reflect changes in the latent construct, whereas formative constructs are modeled with indicators that create or determine the construct itself.

In this study, Covariance-Based Structural Equation Modeling (CB-SEM) utilizes a reflective measurement model, which is deemed appropriate for the constructs under investigation. Reflective SEM is employed when indicators (survey items) are considered manifestations of the latent constructs being studied (Hair et al., 2019). In this research, the emotional intelligence (EI) elements such as self-awareness, self-regulation, self-motivation, and relationship management were assessed through indicators that reflect various facets of these constructs. These indicators collectively represent the underlying latent variables rather than forming them (Schumacker & Lomax, 2016).

Recent studies support the use of reflective models in EI research. For instance, Liu et al. (2023) provide evidence that reflective SEM is effective in capturing the multidimensional nature of EI constructs and their impact on job performance. Similarly, a study by Kim and Lee (2021) demonstrates that reflective SEM allows for a comprehensive understanding of how EI indicators reflect the underlying constructs and influence outcomes such as job performance, with cognitive ability serving as a mediating variable (Kline, 2016; Zhao et al., 2023).

In contrast, formative SEM would be suitable if the indicators were conceptualized as forming or causing the latent construct. In a formative model, the indicators are not reflections of a latent variable but rather components that collectively define the

construct (Bollen & Lennox, 1991). For instance, if self-awareness were viewed as a composite of specific behaviors or skills that create the construct itself, a formative model would be appropriate. However, recent research by Singh and Verma (2022) argues that formative models are less effective for constructs with well-defined dimensions like EI, where the focus is on how indicators reflect the construct rather than forming it.

Thus, reflective SEM is preferred in this study because it focuses on understanding how different indicators reflect the underlying EI constructs and their impact on job performance. This approach allows for an examination of how well these indicators reflect the EI elements and influence job performance, with cognitive ability as a mediating variable (Kline, 2016). Using a formative model would imply that the indicators themselves create or define the EI constructs, which does not align with the study's objective of examining how pre-defined constructs and their manifestations affect job performance (Liu et al., 2023; Kim & Lee, 2021).

3.8.6 Pilot Study

A pilot study is usually carry out by most of the researchers globally to test the validity of the questions proposed (Lowe, 2019) . It can be said as a clinical study in fulfill the objective of test methodology, tools for gathering data, techniques for recruiting samples, and other component testing (Lowe, 2019). The test was conducted among the targeted group of the employees at “*Department of Agriculture (DOA), Muda Agricultural Development Authority (MADA), Federal Agricultural Marketing Authority (FAMA), and Malaysian Agricultural Research and Development Institute*

(*MARDI*)”. Through the pilot study, the preliminary ethical approval, which tested in a small scale of the full survey, will strictly observed to by the employees of the organization to the data analysis. The researcher has agreed to test on 90 employees in order to comply on the pilot test requirements (Teare, Dimairo, Shephard, Hayman, Whitehead & Walters, 2014).

Table 3.15 below shows the output variable data of normality test in conducting pilot study. The spectrum of the normality measure must be between -2 to 2 for Skewness and Kurtosis. For this pilot study, all variables tested were normally distributed.

The output from this analysis recorded Skewness and Kurtosis for EI element (self-awareness) at 0.208 and -0.440. Besides, other elements of EI (self-motivation) was also resulted a normal distribution as it indicates both Skewness and Kurtosis at 0.369 and -0.816. Respectively. Moreover, EI element (self-regulation) recorded its Skewness and Kurtosis at 0.062 and 0.249 which was also normally distributed which same goes to the last element of EI (relationship management) studied indicated its Skewness and Kurtosis at 0.248 and -0.542 respectively.

Furthermore, cognitive ability was also resulted a normal distribution in this study which its Skewness and Kurtosis rated at 0.440 and 0.757. Finally, job performance was also recorded a normal distribution as its Skewness and Kurtosis was -0.26 and -0.322 respectively. All of the figures resulted in this analysis can be found in the Appendix A.

Table 3.15
Normality Test

Variables	Skewness	Kurtosis	Decision
Self-awareness	0.208	-0.440	Normal
Self-motivation	0.369	-0.816	Normal
Self-regulation	0.062	-0.249	Normal
Relationship management	0.248	-0.542	Normal
Cognitive ability	0.440	0.757	Normal
Job performance	-0.26	-0.322	Normal

Cronbach's Alpha was utilized to provide the accurate result to measure the reliability test. The Cronbach's Alpha is an internal continuity statistic such as how tightly a group of objects associated with the category which it is known to be a reliability indication of size. Table 3.16 shows the indicators of the Cronbach's Alpha.

Table 3.16
Indicators for Cronbach's Alpha

Cronbach's Alpha	Internal Consistency
>0.90	Excellent
$0.9 > \alpha \geq 0.89$	Good
$0.80 > \alpha \geq 0.70$	Acceptable
$0.70 > \alpha \geq 0.60$	Questionable
$0.60 > \alpha \geq 0.50$	Poor
$0.50 \geq \alpha$	Unacceptable

Based on Table 3.17, the finding from pilot study were valid for all variables which showed reliable. It was where the first element of EI (self-awareness) resulted a good reliable as its Cronbach's Alpha indicated at 0.815. The second element of EI (self-motivation) recorded its Cronbach Alpha at 0.818 which also at range of good reliable. Moreover, other element of EI (self-regulation) was also resulted a good reliable as its Cronbach's Alpha was recorded at 0.811. The last element of (EI) recorded its good reliable as its Cronbach's Alpha at 0.846. Furthermore, Cognitive ability which also tested in this study also produced a good reliable analysis as its Cronbach's Alpha was recorded at 0.832. Finally, job performance was also analyzed a good reliable as its

Cronbach's Alpha resulted at 0.820. Table 3.17 below showed the result of reliability test as mentioned above.

Table 3.17
Reliability Test

Variables	Cronbach's Alpha	Decision
Self-awareness	0.815	Good Reliable
Self-motivation	0.818	Good Reliable
Self-regulation	0.811	Good Reliable
Relationship management	0.846	Good Reliable
Cognitive ability	0.832	Good Reliable
Job performance	0.820	Good Reliable

3.9 Summary

This chapter concludes by explaining sample classifications, unit analysis, sampling, evaluation, compilation, and outcome analysis. In sum, if the researcher intends to examine the data to be acquired in Chapter Four, designations for the analysis should be followed in accordance with the timeline.



CHAPTER FOUR

DATA ANALYSIS

4.1 Introduction

In this chapter, the researcher analyzed the result of the study analysis. The data collection was conducted through the distribution of questionnaires to the agricultural extension agents at MADA, MARDI, FAMA and DOA. The analysis of reliability testing, assumption testing, and CB-SEM were ran and presented in this whole chapter to answer and supported research questions and hypothesis of the study.

4.2 Data Cleaning

Data cleaning is a critical process in data management that involves identifying and correcting errors or inconsistencies in a dataset to ensure its accuracy and reliability for subsequent analysis. This process includes handling missing values, correcting data entry errors, standardizing data formats, and removing duplicates (Rahm & Do, 2000). Effective data cleaning is essential for maintaining the validity of the analysis and the integrity of the conclusions drawn from the data (Batini & Scannapieco, 2016). According to Kim and Park (2021), in the context of big data, specific methods are employed to manage large-scale datasets, highlighting how proper data cleaning enhances data quality. Additionally, Dreiling and Mersmann (2020) review various data cleaning techniques, particularly for machine learning applications, and illustrate how these methods contribute to achieving high-quality data essential for effective analysis.

In the context of this study, data cleaning is a vital process to ensure the accuracy and reliability of the collected information. Utilizing Google Forms for data collection provided a structured framework where sections were marked as mandatory, thus minimizing the occurrence of missing data (Zhang, Wang, & Li, 2020). Despite this robust setup, there were four missing data points out of 448 respondents. The primary focus of data cleaning in this study involves addressing these missing values, which is crucial for maintaining the integrity of the analysis (Siddique & Ahmed, 2022). Given the low rate of missing data, simple imputation techniques, such as mean or median imputation, can effectively handle these gaps without significantly affecting the overall dataset (Schenker & Taylor, 2021). Additionally, the data cleaning process involves verifying the accuracy and consistency of the responses, including checking for anomalies, ensuring standardized formatting, and categorizing data consistently (Siddique & Ahmed, 2022). Although Google Forms' validation rules reduce the likelihood of data entry errors, manual error checking and duplicate detection remain important to confirm the uniqueness and correctness of each entry (Zhang et al., 2020). By systematically applying these data cleaning techniques, the study ensures that the dataset is accurate, reliable, and ready for analysis, thereby enhancing the validity of the research findings and supporting the robustness of the conclusions drawn (Schenker & Taylor, 2021).

Table 4.1 provided summarizes the extent of missing data in this study, with only 4 missing data points out of 448 total responses, representing just 0.89% of the dataset. This low percentage of missing data suggests minimal impact on the overall analysis, supporting the robustness of the research findings. According to recent studies, such as those by Zhang et al. (2020), small amounts of missing data generally have a negligible effect on the integrity of statistical analysis when appropriate data handling techniques are applied. Furthermore, Schenker and Taylor (2021) emphasize that low rates of missing data can be effectively managed using various imputation methods, ensuring the validity of the research remains intact. Additionally, Siddique and Ahmed (2022) highlight that with careful application of data cleaning methods, the impact of small amounts of missing data on overall results is often minimal. These sources collectively support the assertion that the missing data in this study does not significantly compromise the reliability of the analysis.

Table 4.1
Missing Data

Data Attribute	Total Responses	Missing Data Points	Percentage Missing
Sample Size	448	4	0.89%

4.3 Non-bias Assessment

Non-response bias arises when certain groups are less likely to participate in surveys or provide complete responses, potentially skewing the results and impacting the validity of the research (Baltar & Brunet, 2021). This bias can lead to unrepresentative data, as it may not accurately reflect the characteristics or views of the entire population under study. Addressing non-response bias is crucial for ensuring the reliability and generalizability of survey findings (Groves et al., 2020).

To assess non-response bias, researchers often examine differences between early and late respondents. Late respondents might differ significantly from early respondents in terms of their characteristics or opinions, which can affect the data's representativeness (Blom et al., 2021). Techniques such as Levene's Test for Equality of Variances are used to detect significant differences in variances between these groups, helping identify potential biases (Gonzalez et al., 2023) as showed in Table 4.2.

In this study, while most variables (Self_Awareness, Self_Regulation, Cognitive_Ability, and Job_Performance) do not show significant non-response bias, variables like Self_Motivation and Relationship_Management exhibit marginal significance. This suggests potential variance differences between early and late respondents, indicating that non-response bias could influence these variables. Further investigation is necessary to ensure that the findings are not disproportionately affected by late responders.

Table 4.2
Independent Sample t-test Results for Non-Response Bias

Levene's Test for Equality of variance				
Variable	F-Value	Significance Value (p-value)	Number of Early Responders	Number of Late Responders
Self_Awareness	0.011	0.917	358	90
Self_Motivation	3.069	0.051	358	90
Self_Regulation	0.717	0.398	358	90
Relationship_Management	3.760	0.054	358	90
Cognitive_Ability	0.679	0.411	358	90
Job_Performance	0.108	0.743	358	90

4.4 Demographic Profile

As shown in the table 4.3, the total number of respondents in this study was 448 participants. The number of male respondents consisted of 238 which was 53.1% while female respondents consisted of 210 which was 46.9% all together. Besides, only Malay and Islam respondents of 100% participated in answering the questionnaire. Throughout the investigation, about 13 of respondents aged range at 20-24 years old which at only 2.9%. In addition, about 79 of respondents which 17.6% were from 25-29 years old. However, the highest number of respondents were from 30-34 years old which at 40.6% while 174 of respondents were from 35 years old and above indicated at 38.8%.

This study was aimed to examined the impact of emotional intelligence on agricultural extension agents' job performance using the mediating effect of cognitive ability. Therefore, there were four (4) agencies chosen to participate in this investigation.

Those were “Department of Agriculture (DOA), Muda Agricultural Development Authority (MADA), Federal Agricultural Marketing Authority (FAMA), and Malaysian Agricultural Research and Development Institute (MARDI)”. There were 100 of respondents (22.3%) from MADA, 140 (31.3%) from MARDI, 137 (20.6%) from FAMA and the least 71 (15.8%) from DOA Kedah’s branch. Moreover, the researcher also examined the executive level and non-executive which consisted of 126 (28.1%) and 322 (71.9%) respectively.

Throughout this study, only 448 of respondents responded to this survey out of 491 sample frame mentioned earlier. However, it is considered reasonable and acceptable as stated by Fowler (2002), it is extremely uncommon that the population segment to be taken into account while determining sample size and the method used to calculate the sample size has very little bearing on how well the sample is expected to represent the population. (Fowler, 2002). Additionally, 30% response rate is deemed appropriate for mail-based questionnaires, according to Sekaran and Bougie (2010) as this study has received responses rate of 91% from the designated sample frame.

Table 4.3
Demographic Profile

Respondent Profile	Items	Frequency (N=448)	Percent (100%)
Gender	Male	238	53.1
	Female	210	46.9
Ethnicity	Malay	448	100
Religion	Islam	448	100
Age	20-24 years old	13	2.9
	25-29 years old	79	17.6
	30-34 years old	182	40.6
	35 years old and above	174	38.8
Agency	MADA	100	22.3
	MARDI	140	31.3
	FAMA	137	20.6
	DOA	71	15.8
Level of position	Executive	126	28.1
	Non-executive	322	71.9

4.5 Descriptive Statistics

Descriptive statistics are important because they provide important data in a more understandable way, which facilitates data interpretation and helps to understand the distribution of the construct. The descriptive function was computed using the covariance matrix method in the study to ensure that all variables were taken into account. The original item scores were parcelled to create the composite scores for the variables. According to the factor loadings of the concept, parcels are the total or mean of several independent indicators or items (Coffman & MacCallum, 2005; Hair et al., 2006). The 5-point Likert scale mean and standard deviation of the constructs examined are shown in Table 4.4.

Table 4.4
Results of Descriptive Statistics for Variables

Variables	Mean	Standard Deviation	Minimum	Maximum
Self-Awareness	3.0781	1.0318	1.60	5.00
Self-Motivation	3.1781	0.8391	1.40	5.00
Self-Regulation	3.4098	0.8682	1.00	5.00
Relationship Management	3.0826	1.0604	1.20	5.00
Cognitive Ability	3.5272	0.8424	1.00	5.00
Job Performance	3.3478	0.9614	1.40	5.00

Self-awareness has a mean score of 3.0781 with a standard deviation of 1.0318, indicating variability around how individuals perceive their awareness. Scores ranged from a minimum of 1.60 to a maximum of 5.00, suggesting diverse levels of self-awareness among participants.

Self-motivation shows a slightly higher mean of 3.1781 and a lower standard deviation of 0.8391 compared to Self-Awareness. This narrower spread indicates more consistency in self-motivation levels among the respondents, with scores ranging from 1.40 to 5.00.

Self-regulation is scored even higher on average at 3.4098 with a standard deviation of 0.8682. This construct has the widest range of scores from 1.00 to 5.00, indicating significant differences in how participants regulate their behavior and emotions.

Relationship management is assessed with a mean of 3.0826 and a standard deviation of 1.0604, mirroring the spread seen in Self Awareness. The scores here range from 1.20 to 5.00, which highlights varying capacities in managing interpersonal relationships among the participants.

Cognitive ability has the highest mean score of 3.5272 among all constructs, with a relatively low standard deviation of 0.8424. The range of scores from 1.00 to 5.00 underscores a broad spectrum of cognitive capabilities within the group.

Lastly, Job performance, with a mean of 3.3478 and a standard deviation of 0.9614, reflects a moderate assessment of performance across the board, with scores stretching from 1.40 to 5.00. This suggests differing levels of job performance among the respondents.

4.6 Assumption Testing and Justification for Applying CB-SEM

4.6.1 Univariate Outliers

For the detection of univariate outliers, the standardized z-score can be used. Hair et al (1998) indicated that for considerable sample size exceeding 2000, absolute (z) > ± 4 represents an extreme observation. The items accompanied by the z-scores are summarized and presented in Table 4.5.

Table 4.5
Results of Univariate Outliers Based on the Standardized Values

Construct	Item	Standardized value (Z-Score)	
		Lower Bound	Upper Bound
Self-Awareness (SA)	SA_B1	-1.009	1.781
	SA_B2	-1.925	1.661
	SA_B3	-1.023	1.646

	SA_B4	0.037	0.954
	SA_B5	-0.044	1.745
Self-Motivation (SM)	SM_C1	0.806	1.730
	SM_C2	0.861	1.795
	SM_C3	1.119	1.119
	SM_C4	0.975	1.935
	SM_C5	0.189	1.514
Self-Regulation (SR)	SR_D1	0.797	1.727
	SR_D2	-0.193	1.685
	SR_D3	-0.220	1.643
	SR_D4	0.325	1.529
	SR_D5	-0.883	1.521
Relationship Management (RM)	RM_E1	-0.081	1.565
	RM_E2	-2.021	1.686
	RM_E3	-0.086	1.584

	RM_E4	-0.009	1.690
	RM_E5	-0.017	0.815
Cognitive Ability (CA)	CA_F1	-0.949	0.305
	CA_F2	0.326	0.326
	CA_F3	-0.674	0.393
	CA_F4	0.729	0.729
	CA_F5	0.678	0.678
Job Performance	JP_G1	0.536	1.559
	JP_G2	0.586	1.558
	JP_G3	0.631	1.582
	JP_G4	-2.125	1.646
	JP_G5	0.693	1.649

Based on the values from the table, the observations of the research constructs ranged from -2.125 to - 1.935, which indicates that they did not go over the threshold of ± 4 , evidencing no univariate outliers present in all observations.

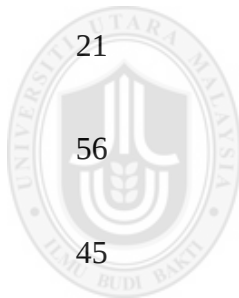
4.6.2 Multivariate Outliers

Data was also exposed to multivariate outliers Detection using the Mahalanobis distance. In particular, Using AMOS regression, Mahalanobis D-squared distances were generated for each instance, where the endogenous variables were on-demographic measurements and the exogenous variables were case numbers. A high D^2/df that is greater than 3.5 suggests the existence of a multivariate outlier, according to Hair et al. (1998). According to Table 4.6, 69 has the highest D^2 value, which is 203.83. The highest D^2/df for the 390 exogenous and endogenous variables, along with their relative estimation errors, is $= 0.523$ ($203.83/390$), which is significantly less than the cut-off of 3.5. This indicates that there are no multivariate outliers, and as a result, all of the observations were retained for the next study.

Table 4.6
Multivariate Outlier Analysis

Observation Number	Mahalanobis d-Squared	P1	P2
69	203.83	.00	.00
70	161.56	.00	.00
39	157.19	.00	.00
43	151.61	.00	.00
38	145.60	.00	.00

46	141.04	.00	.00
57	140.33	.00	.00
1	139.68	.00	.00
68	113.95	.00	.00
5	110.67	.00	.00
50	109.33	.00	.00
21	108.94	.00	.00
56	106.09	.00	.00
45	102.97	.00	.00
374	96.83	.00	.00
16	91.15	.00	.00
49	89.86	.00	.00
42	88.83	.00	.00
15	87.57	.00	.00
61	86.80	.00	.00
63	84.78	.00	.00



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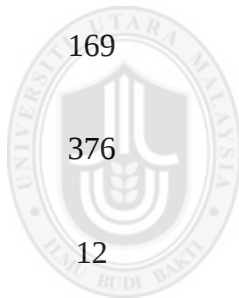
35	84.59	.00	.00
58	82.70	.00	.00
62	80.86	.00	.00
373	80.50	.00	.00
64	79.42	.00	.00
40	77.27	.00	.00
74	76.25	.00	.00
17	74.70	.00	.00
18	74.29	.00	.00
59	71.21	.00	.00
51	69.50	.00	.00
314	68.62	.00	.00
4	66.60	.00	.00
11	65.52	.00	.00
44	64.52	.00	.00
19	62.76	.00	.00



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55	58.59	.00	.00
207	58.45	.00	.00
8	57.66	.00	.00
380	57.10	.00	.00
352	56.36	.00	.00
60	56.11	.00	.00
32	56.10	.00	.00
14	55.87	.00	.00
71	55.30	.00	.00
404	55.12	.00	.00
27	54.76	.00	.00
316	54.11	.00	.00
3	53.83	.00	.00
31	52.80	.01	.00
87	52.74	.01	.00
77	52.57	.01	.00

439	52.34	.01	.00
72	52.10	.01	.00
241	52.01	.01	.00
315	51.17	.01	.00
13	50.38	.01	.00
168	49.62	.01	.00
169	49.62	.01	.00
376	49.44	.01	.00
12	49.38	.01	.00
54	49.26	.01	.00
248	49.10	.02	.00
104	48.87	.02	.00
67	48.46	.02	.00
438	47.96	.02	.00
405	47.68	.02	.00
349	47.45	.02	.00



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386	47.37	.02	.00
105	47.07	.02	.00
284	46.87	.03	.00
392	46.28	.03	.00
152	45.97	.03	.00
155	45.35	.04	.00
106	45.19	.04	.00
296	45.14	.04	.00
103	44.46	.04	.00
295	44.33	.04	.00
334	43.83	.05	.00
96	43.56	.05	.00
381	43.55	.05	.00
78	43.01	.06	.00
10	42.36	.07	.00
9	42.25	.07	.00



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224	42.09	.07	.00
115	41.92	.07	.00
79	41.90	.07	.00
101	41.85	.07	.00
111	41.61	.08	.00
213	41.58	.08	.00
302	40.97	.09	.00
285	40.56	.09	.00
225	40.46	.10	.00
299	39.78	.11	.00
102	39.64	.11	.00
428	39.14	.12	.00
313	38.95	.13	.00
112	38.88	.13	.00
134	38.88	.13	.00

4.6.3 Assessment of the Data Normality and Multicollinearity

This study conducted the normality test to meet the assumption of the maximum likelihood estimation when it comes to normal data distribution. The outcomes of the normality test of the model variables as well as items are presented in Table 4.7.



Table 4.7
Assessment of Normality and Multicollinearity for Measurement Model

Construct	Item	Skewness	Std.	Kurtosis	Std.	VIF	Linearity
			Error of Skewness		Error of Kurtosis		
Self-Awareness (SA)	SA_B1	.004	.115	-1.567	.230	8.084	<.001
	SA_B2	.076	.115	-1.530	.230	5.770	<.001
	SA_B3	.006	.115	-1.532	.230	8.287	<.001
	SA_B4	.069	.115	-1.259	.230	5.416	<.001
	SA_B5	-.058	.115	-1.444	.230	12.674	<.001
Self-Motivation (SM)	SM_C1	-.021	.115	-1.464	.230	10.910	<.001
	SM_C2	.053	.115	-1.495	.230	10.322	<.001
	SM_C3	.366	.115	-.962	.230	3.954	<.001
	SM_C4	.270	.115	-1.285	.230	5.753	<.001
	SM_C5	-1.260	.115	2.327	.230	1.478	<.001
	SR_D1	.049	.115	-1.509	.230	8.957	<.001
	SR_D2	-.116	.115	-1.533	.230	19.861	<.001

Self-Regulation (SR)	SR_D3	-.177	.115	-1.541	.230	22.569	<.001
	SR_D4	-.919	.115	.747	.230	5.003	<.001
	SR_D5	-.851	.115	.558	.230	6.587	<.001
Relationship Management (RM)	RM_E1	-.031	.115	-.972	.230	2.634	<.001
	RM_E2	-.268	.115	-.891	.230	3.241	<.001
	RM_E3	-.058	.115	-1.355	.230	7.770	<.001
	RM_E4	-.071	.115	-1.349	.230	6.886	<.001
	RM_E5	-.008	.115	-1.333	.230	6.532	<.001
Cognitive Ability (CA)	CA_F1	-1.049	.115	1.088	.230	18.373	<.001
	CA_F2	-1.001	.115	.637	.230	16.824	<.001
	CA_F3	-.878	.115	-.228	.230	7.923	<.001
	CA_F4	-.209	.115	-1.483	.230	10.355	<.001
	CA_F5	-.341	.115	-1.302	.230	7.767	<.001
Job Performance	JP_G1	-.637	.115	-.825	.230		
	JP_G2	-.446	.115	-1.111	.230		
	JP_G3	-.406	.115	-1.140	.230		
	JP_G4	-.285	.115	-1.307	.230		

JP_G5 -.297 .115 -1.299 .230



Based on the results, the skewness and kurtosis of all items ranged between 3 and 7 respectively. It can thus be concluded that the data set of the items were distributed in a normal manner. Table 4.7 lists the skewness values (-1.260 to 0.366) and the kurtosis values (-1.567 to 2.327). There is evident multicollinearity in several constructs as indicated by high VIF values. However, confirmatory factor analysis (CFA) will be used for model adjustment. The linearity component is highly significant, suggesting that there is a strong linear relationship between the independent variables and job performance. This implies that as knowledge of one's feelings towards others increases or decreases, job performance increases or decreases in a predictable linear fashion.

4.6.4 Confirmatory Factor Analysis (CFA)

The construct's operationalization is a crucial step in ensuring accuracy (Hair et al., 2006) and according to researchers; there are several scales in this regard. Nevertheless, despite these scales, researchers frequently encounter the problem of a lack of a universal scale, which forces them to create new measuring scales or modify already-existing ones to account for novel situations. Given the aforementioned factors, the measurement of constructs serves as the foundation for the SEM analysis used in the item selection process (Hair et al., 2006). Three (3) distinct CFA models were created in the current study for the latent dimensions of organizational culture, transformational leadership, and genuine leadership, as well as an overall CFA for all of the latent constructs. The next subsections go into depth about each measurement model's creation and include the findings of a uni-dimensionality test for each construct that was performed using AMOS 24.

4.6.4.1 CFA Model for Self-Awareness (SA)

Five (5) items were utilized in this study for the measurement of five first-order constructs of transformational leadership namely, SA_B1, SA_B2, SA_B3, SA_B4 and SA_B5. Figure 4.1, presents the hypothesized SA CFA model along with the related 5 items.

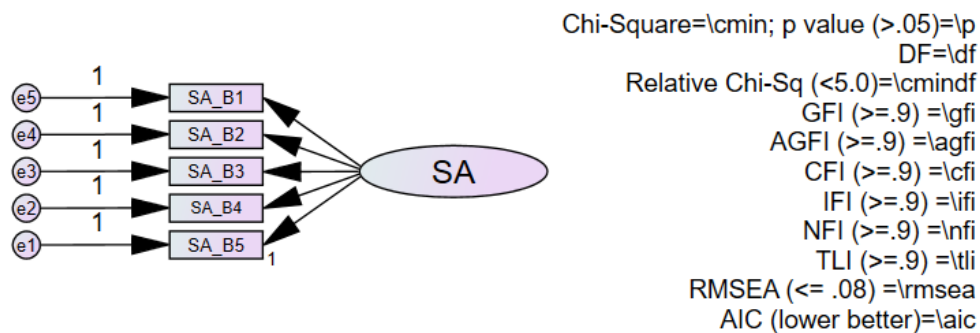


Figure 4.1 The Hypothesized SA CFA Model

4.6.4.1.1 Model Estimation

All five (5) indicators showed statistically significant interrelationships. Since the kurtosis was between ± 7 (Byrne, 2010) and the skewness was within ± 2 (Tabachnick & Fidell, 2007), the data does not deviate from the premise of normalcy. A statistically significant $\chi^2 (5) = 90.810$, $p = .000$ was found in the hypothesized CFA model of the five (5) items, indicating poor model fit and an insufficient fit between the model's inferred covariance matrix and the covariance matrix of the observed data.

It was discovered that other fit indices had sufficient values. The values of GFI =.921, CFI =.969, and TLI =.938 surpass the cutoff point of $\geq .90$. Nonetheless, the RMSEA value of.196 and the normed $\chi^2/\partial f = 18.162$ both above the permissible range of < 3 and $\leq .08$, respectively. The SA CFA model can be shown in Figure 4.2.

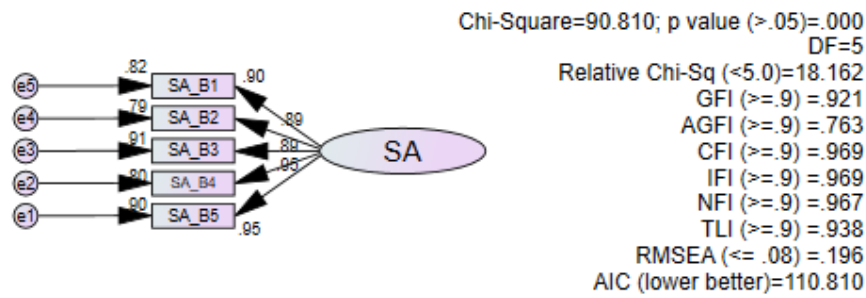


Figure 4.2 SA CFA Model

4.6.4.1.2 Model Re-specification

To improve model fit, the choice was made to correlate error terms. As a result, the CFA model that was created was revised. A better goodness of fit index was demonstrated by the re-specified model overall, and this was in line with the data. The re-specified model had significant goodness of fit indices. The re-specified model demonstrated satisfactory fit, as evidenced by the normed $\chi^2/\text{df} = 1.416$ and the RMSEA value =.031, which respectively lie within the acceptable range of ≤ 3 and $\leq .08$. It was also discovered that other fit indices had suitable values. Over the threshold value of $\geq .90$, the GFI =.999, CFI = 1.000, and TLI =.999 were found. The fit indices of the generated model and the re-specified model are compared to its suggested threshold values in Table 4.8.

Table 4.8
Summary of the Fit Indices of the CFA model of SA

Fit Indices	Accepted fit	SA Generated Model	SA Re-specified Model
Chi-square	Insignificant	90.810	1.416
p value*	$.001 \leq p \leq .05$	.000	.234
CMIN/DF	≤ 3	18.162	1.416
CFI	$\geq .90$	.969	1.000
TLI	$\geq .90$	.938	.999
GFI	$\geq .90$	.921	.999
RMSEA	$\leq .08$	.196	.031

Source: Kline, 2010; Schumacker & Lomax (2004); Hair et. al (2010); Hu & Bentler (1995); Byrne (2010), Fabrigar, et. al (2013). * Statistically significant at .05.

Table 4.8 indicates that the re-specified CFA model for SA is within the acceptable fit index value range. Consequently, this suggests the indicated covariance matrix and the covariance matrix of observed data fit each other sufficiently.

Furthermore, the parameter estimations underwent analysis and were discovered to exhibit statistical significance. The loadings varied between SA_B2 (.865) to SA_B3 (.959). They demonstrated the right path and had no offensive approximations. The squared multiple correlations (SMC) showed a range of values from .748 (SA_B2) to .920 (SA_B3). The dependability of the indicators under investigation is demonstrated by the SMC, which measures how effectively the observed variables function as the latent variables' manifestations (Blunch, 2008). It's important to note that every SMC value for the updated multidimensional was higher than .25. presented strong evidence of the variance in the five observed elements of

the updated SA CFA model. The re-specified CFA model of SA is shown in Figure 4.3.

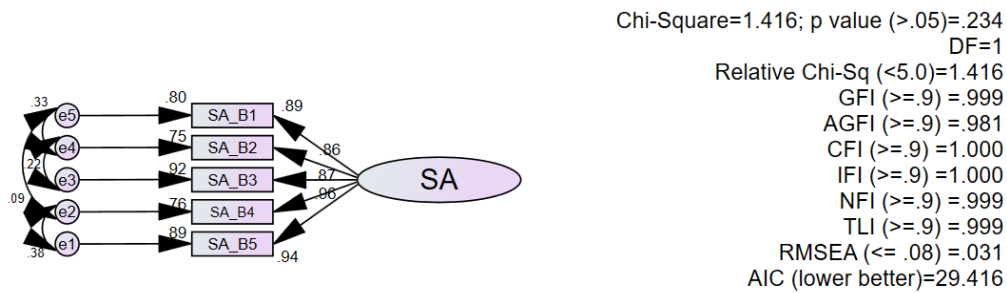


Figure 4.3 Revised CFA Model for SA

4.6.4.2 Reliability and Convergent Validity

Reliability and convergent validity tests are performed on the CFA model of SA following the attainment of unidimensionality. To be more specific, three tests were used to assess reliability: Cronbach's alpha, composite reliability, and average variance extracted (Hughes et al., 2010). Convergent and discriminant validity tests were used to assess validity. Table 4.9 lists the results of the convergent validity and Cronbach's alpha for the five-item CFA model of SA.

Table 4.9
Results of Cronbach Alpha and Convergent Validity for SA of CFA Model

Construct / Variable	Item	Final Factor Loading	Average Variance Extracted (Hughes et al., 2010) ^a	Composite Reliability (CR) ^b	Internal Reliability Cronbach Alpha
Self-Awareness (SA)	SA_B1	.895	.823	.959	.965
	SA_B2	.865			
	SA_B3	.959			
	SA_B4	.871			
	SA_B5	.942			

a: Average Variance Extracted = (summation of the factor loadings)/((summation of the square of the factor loading)+(summation of the error variance)).

b: Composite reliability = (square of the summation of the factor loadings)/((square of the summation of the factor loadings)+(square of the summation of the error variances)).

The Cronbach Alpha and convergent validity results for the Confirmatory Factor Analysis (CFA) model containing the Self-Awareness (SA) construct are shown in Table 4.7. Several important indicators are included in this table to assess the validity and reliability of the Self-Awareness scale:

The final factor loading indicates how well each item (SA1 through SA5) correlates with the underlying Self-Awareness construct. The factor loadings for all items are very high, ranging from .865 to .959, suggesting that each item is a good indicator of the Self-Awareness construct. High factor loadings imply that the items are highly consistent with the latent variable they are supposed to measure.

The AVE for Self-Awareness is .823, as reported by Hughes et al., 2010. This value exceeds the commonly accepted threshold of .50, indicating that, on average, the construct explains a large portion of the variance in its items. This metric helps in assessing the convergent validity, showing that the items correlate well with one another and reliably represent the construct.

The Composite Reliability for Self-Awareness is .959. This value is well above the benchmark of .70, suggesting that the scale is highly reliable. Composite Reliability considers the relative loadings of the items and provides a measure of the internal consistency of the scale, similar to Cronbach's Alpha but often considered a more accurate reflection of reliability in factor models.

The Cronbach's Alpha for Self-Awareness is denoted as .965. A Cronbach's Alpha of .70 or higher is desirable, showing good internal consistency among the items in a scale. Overall, these results collectively demonstrate that the Self-Awareness scale used in the CFA model is both reliable and valid, with strong loadings, high variance extraction, and excellent composite reliability, making it a robust tool for measuring Self-Awareness in the context of the study.



4.6.4.3 CFA Model for Self-Motivation (SM)

Five (5) items were utilized in this study for the measurement of five (5) first-order constructs of transformational leadership namely, SM_C1, SM_C2, SM_C3, SM_C4 and SM_C5. Figure 4.4, presents the hypothesized SM CFA model along with the related five (5) items.

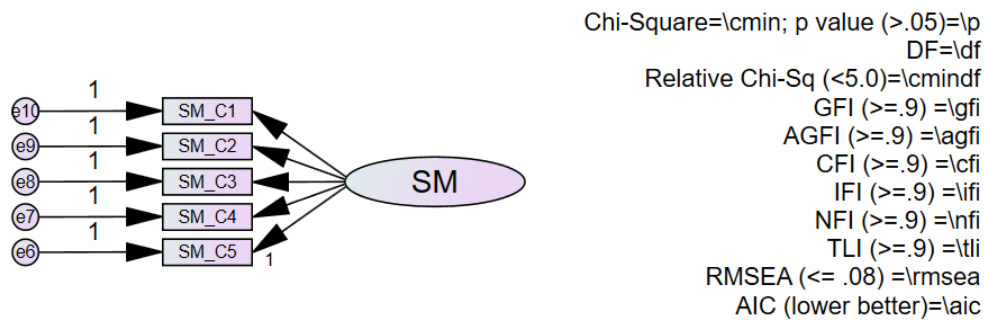


Figure 4.4 The Hypothesized SM CFA Model

4.6.4.3.1 Model Estimation

There was statistically significant correlation between each of the five (5) measures. The skewness between ± 2 (Tabachnick & Fidell, 2007) and kurtosis between ± 7 (Byrne, 2010), explained data do not deviate from the premise of normalcy. An insufficient match was discovered ranging in the proposed covariance matrix of the model and the covariance matrix of the actual data, as shown by the hypothesized CFA model of the five (5) items, with a $\chi^2 (5) = 200.781$, $p = .000$ statistically significant.

Inadequate values were obtained for other fit indices. The values of GFI = .862, CFI = .892, and TLI = .784 surpass the cutoff point of $\geq .90$. Nonetheless, the RMSEA value of .296 and the normed $\chi^2/\text{df} = 40.156$ both above the permissible range of < 3 and $\leq .08$, respectively. The SM CFA model can be shown in Figure 4.5.

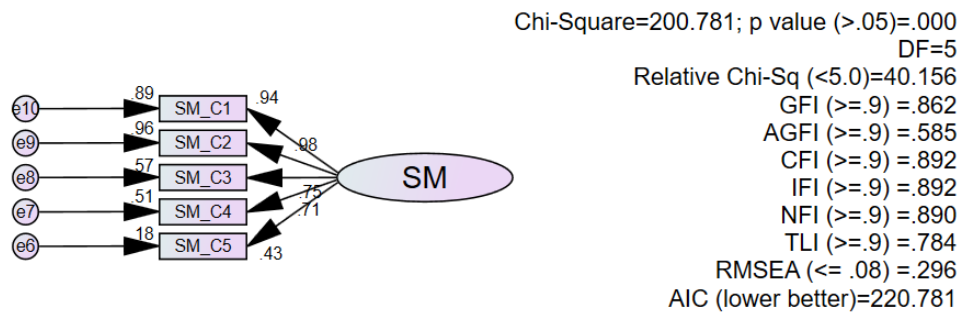


Figure 4.5 SM CFA Model

4.6.4.3.2 Model Re-specification

To improve model fit, it was decided to eliminate one item and correlate error terms. As a result, the CFA model that was created was revised. A better goodness of fit index was demonstrated by the re-specified model overall, and this was in line with the data. The re-specified model had significant goodness of fit indices. The re-specified model showed satisfactory fit, as evidenced by the normed $\chi^2/df = 1.140$ and the RMSEA value =.018 falling inside the acceptable ranges of ≤ 3 and $\leq .08$, respectively. It was also discovered that other fit indices had suitable values. The values of GFI =.999, CFI = 1.000, and TLI = 1.000 exceeded the cutoff point of $\geq .90$. The fit indices of the generated model and the re-specified model are compared with the suggested threshold values in Table 4.10.

Table 4.10
Summary of the Fit Indices of the CFA model of SM

Fit Indices	Accepted fit	SM Generated Model	SM Re-specified Model
Chi-square	Insignificant	200.781	1.140
p value*	$.001 \leq p \leq .05$	.000	.286
CMIN/DF	≤ 3	40.156	1.140
CFI	$\geq .90$	.892	1.000
TLI	$\geq .90$	.784	.999
GFI	$\geq .90$	.862	1.000
RMSEA	$\leq .08$	.296	.018

Source: Kline, 2010; Schumacker & Lomax (2004); Hair et. al (2010); Hu & Bentler (1995); Byrne (2010), Fabrigar, et. al (2013). * Statistically significant at .05.

Table 4.10 indicates that the CFA model's re-specified model is within the acceptable fit index value range. As a result, there is a sufficient match between the implied covariance matrix of the model and the covariance matrix of the observed data.

Furthermore, the parameter estimations underwent analysis and were discovered to exhibit statistical significance. From.693 (SM_C4) to.935 (SM_C1), the loadings varied. They demonstrated the right path and had no offensive approximations. Squared multiple correlations (SMC) had values ranging from.480 (SM_C4) to.874 (SM_C1). The dependability of the indicators under investigation is demonstrated by the SMC, which measures how effectively the observed variables function as the latent variables' manifestations (Blunch, 2008). It's important to note that every SMC value for the updated multidimensional was higher than.25. presented strong evidence of the variance in the five observed items of the updated SM CFA model. The re-specified CFA model of SM is shown in Figure 4.6.

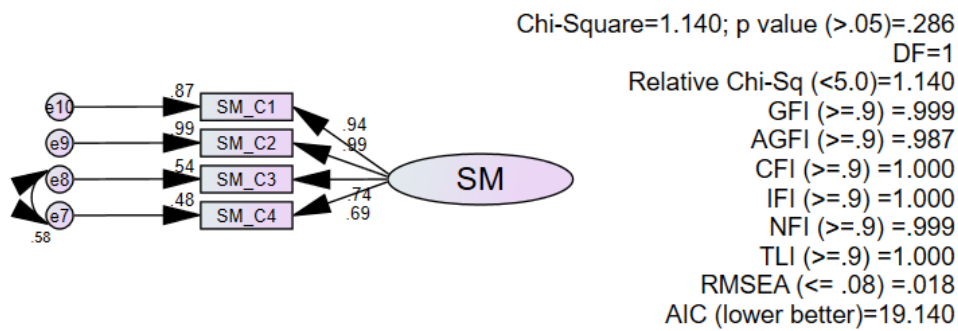


Figure 4.6 Revised CFA Model for SM

4.6.4.4 Reliability and Convergent Validity

The reliability and convergent validity of the CFA model of SM are assessed following the attainment of the construct's unidimensionality. To be more specific, three tests were used to assess reliability: Cronbach's alpha, composite reliability, and average variance extracted (Hughes et al., 2010). Convergent and discriminant validity tests were used to assess validity. Table 4.9 lists the Cronbach's alpha and convergent validity findings for the four-item CFA model of SM.

Table 4.11

Results of Cronbach Alpha and Convergent Validity for SM of CFA Model

Construct / Variable	Item	Final Factor Loading	Average Variance Extracted (Hughes et al., 2010) ^a	Composite Reliability (CR) ^b	Internal Reliability Cronbach Alpha
Self-Motivation (SM)	SM_C1	.693	.721	.910	.922
	SM_C2	.736			
	SM_C3	.935			
	SM_C4	.994			

a: Average Variance Extracted = (summation of the factor loadings)/((summation of the square of the factor loading)+(summation of the error variance)).

b: Composite reliability = (square of the summation of the factor loadings)/((square of the summation of the factor loadings)+(square of the summation of the error variances)).

A Confirmatory Factor Analysis (CFA) model analyzing the Self-Motivation(SM) construct is presented in Table 4.11, with particular attention paid to the Cronbach Alpha and convergent validity metrics. Several items (SM_C1 through SM_C4) measuring various aspects of Self-Management are listed in the table. The following information is available about their factor loadings, average variance extracted, composite reliability, and internal reliability:

The final factor loadings represent the degree to which each item correlates with the latent Self-Motivation construct. The loadings range from .693 for SM_C1 to .994 for SM_C4, indicating varying degrees of association with the construct. Particularly, SM_C4 shows an exceptionally high loading, suggesting it is a very strong indicator of the Self-Management construct.

The AVE for the Self-motivation construct is .721, as reported by Hughes et al., 2010. This exceeds the commonly accepted threshold of .50, indicating good convergent validity. A high AVE value suggests that a significant proportion of the variance in the observed items is accounted for by the Self-Management construct, confirming that the items strongly relate to each other and effectively capture the essence of Self-Management.

The composite reliability score is .910, which is well above the acceptable standard of .70. This high value reflects strong internal consistency among the items, indicating that they cohesively measure the construct of Self-motivation. The Cronbach's Alpha value is .922, which is considered adequate for most research contexts.

Overall, the results from Table 4.11 demonstrate that the Self-motivation construct within the CFA model is valid and reliable. The items used to measure this construct show strong factor

loadings and excellent internal consistency, substantiating their effectiveness in assessing aspects of Self-Motivation reliably within the study's framework.

4.6.5 CFA Model for Self-Regulation (SR)

Five (5) items were utilized in this study for the measurement of five first-order constructs of transformational leadership namely, SR_D1, SR_D2, SR_D3, SR_D4 and SR_D5. Figure 4.7, presents the hypothesized SR CFA model along with the related 5 items.

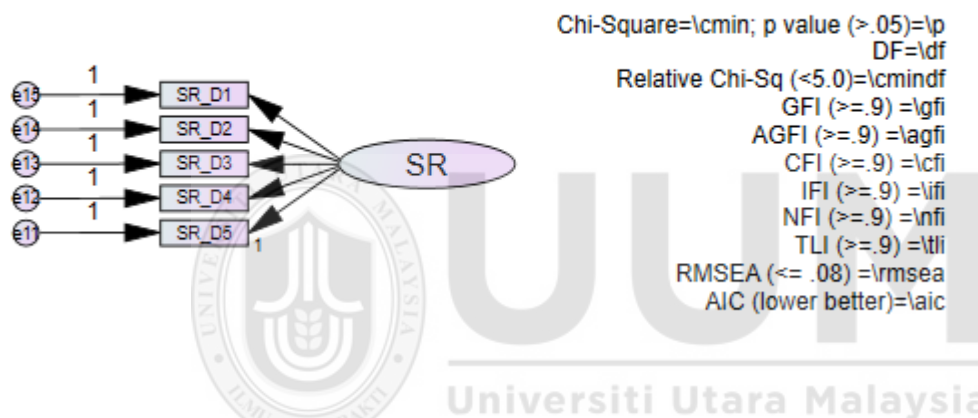


Figure 4.7 The Hypothesized SR CFA Model

4.6.5.1 Model Estimation

All five (5) indicators showed statistically significant interrelationships. Since the kurtosis was between ± 7 (Byrne, 2010) and the skewness was within ± 2 (Tabachnick & Fidell, 2007), the data does not deviate from the premise of normalcy. A statistically significant $\chi^2 (5) = 341.690$, $p = .000$ was found in the hypothesized CFA model of the five (5) items, indicating poor model fit and an insufficient fit between the model's inferred covariance matrix and the covariance matrix of the observed data.

Inadequate values were obtained for other fit indices. The values of .816 for the GFI, .878 for the CFI, and .755 for the TLI are all below the $\geq$ criterion .90. Nevertheless, the RMSEA value

of.388 and the normed $\chi^2/\partial f = 68.388$ are both above the permitted range of < 3 and $\leq .08$, respectively. The SR CFA model can be shown in Figure 4.8.

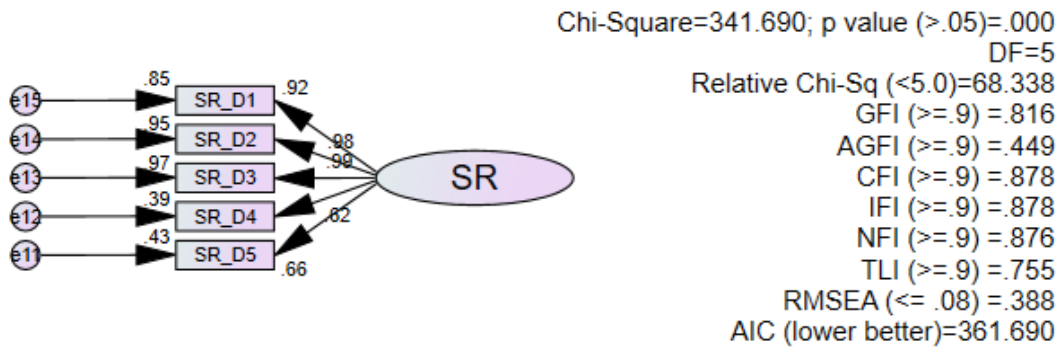


Figure 4.8 SR CFA Model

4.6.5.2 Model Re-specification

To improve model fit, the choice was made to correlate error terms. As a result, the CFA model that was created was revised. A better goodness of fit index was demonstrated by the re-specified model overall, and this was in line with the data. The re-specified model had significant goodness of fit indices. The re-specified model demonstrated good fit, as evidenced by the normed $\chi^2/\partial f = 2.514$ and the RMSEA value =.058, which respectively lie within the acceptable range of ≤ 3 and $\leq .08$. It was also discovered that other fit indices had suitable values. .991 for the GFI, .998 for the CFI, and .995 for the TLI were all above the $\geq .90$ threshold. The fit indices of the produced model and the re-specified model are compared with the suggested threshold values in Table 4.12.

Table 4.12
Summary of the Fit Indices of the CFA model of SR

Fit Indices	Accepted fit	SR Generated Model	SR Re-specified Model
Chi-square	Insignificant	341.690	10.058
<i>p</i> value*	$.001 \leq p \leq .05$	.000	.039
CMIN/DF	≤ 3	68.338	2.514
CFI	$\geq .90$	.878	.998
TLI	$\geq .90$	.755	.995
GFI	$\geq .90$	.816	.991
RMSEA	$\leq .08$	.388	.058

Source: Kline, 2010; Schumacker & Lomax (2004); Hair et. al (2010); Hu & Bentler (1995); Byrne (2010), Fabrigar, et. al (2013). * Statistically significant at .05.

The re-specified CFA model is within the acceptable fit index value range, according to Table 4.12. Consequently, this shows that the indicated covariance matrix of the model and the covariance matrix of the observed data suit each other well.

Furthermore, the parameter estimations underwent analysis and were discovered to exhibit statistical significance. Between .616 (SR_D4) and .986 (SR_D3) were the loadings' range. They demonstrated the right path and had no offensive approximations. The squared multiple correlations (SMC) showed a range of values between .380 (SR_D4) and .973 (SR_D3). The dependability of the indicators under investigation is demonstrated by the SMC, which measures how effectively the observed variables function as the latent variables' manifestations (Blunch, 2008). It's important to note that every SMC value for the updated multidimensional was higher than .25. presented strong evidence of the variance in the five observed items of the

updated SR CFA model. Figure 4.9 shows the SR CFA model as it has been respecified.

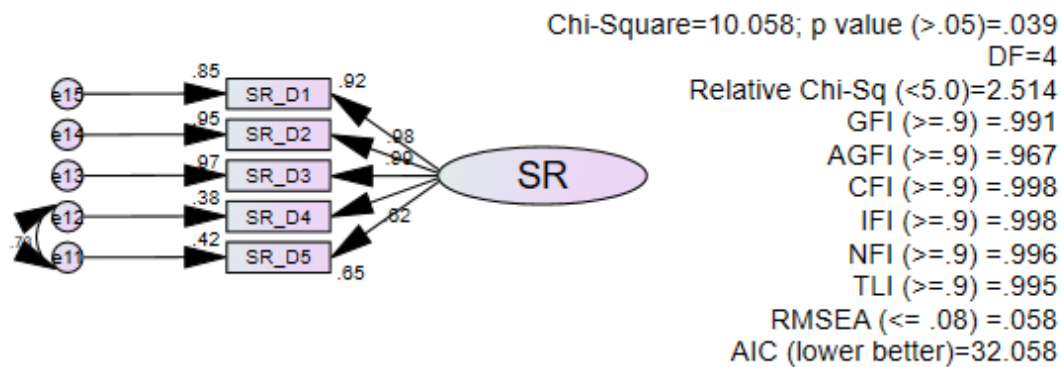


Figure 4.9 Revised CFA Model for SR

4.6.5.2.1 Reliability and Convergent Validity

The reliability and convergent validity of the CFA model of SR are assessed following the attainment of the construct's unidimensionality. To be more specific, three tests were used to assess reliability: Cronbach's alpha, composite reliability, and average variance extracted (Hughes et al., 2010). Convergent and discriminant validity tests were used to assess validity.

Table 4.11 lists the convergent validity and Cronbach's alpha scores for the CFA model of SR with five items.

Table 4.13

Results of Cronbach Alpha and Convergent Validity for SR of CFA Model

Construct / Variable	Item	Final Factor Loading	Average Variance Extracted (Hughes et al., 2010) ^a	Composite Reliability (CR) ^b	Internal Reliability Cronbach Alpha
Self-Regulation (SR)	SR_D1	.919	.714	.923	.930
	SR_D2	.977			
	SR_D3	.986			
	SR_D4	.616			
	SR_D5	.648			

a: Average Variance Extracted = (summation of the factor loadings)/((summation of the square of the factor loading)+(summation of the error variance)).

b: Composite reliability = (square of the summation of the factor loadings)/((square of the summation of the factor loadings)+(square of the summation of the error variances)).

Table 4.13 details the validation metrics for the Self-Regulation (SR) construct within a Confirmatory Factor Analysis (CFA) model, which evaluates the reliability and validity of the construct as measured through various items (SR_D1 to SR_D5). This analysis provides insight into how well these items reflect the Self-Regulation construct and the internal consistency among them.

The final factor loadings indicate the strength of the relationship between each individual item and the overall Self-Regulation construct. The loadings for items SR_D1 (.919), SR_D2 (.977), and SR_D3 (.986) are exceptionally high, suggesting that these items are very strong indicators of the Self-Regulation construct. In contrast, items SR_D4 (.616) and SR_D5 (.648) have relatively lower loadings, which indicates a weaker but still significant relationship with the Self-Regulation construct.

The AVE for Self-Regulation is .714, as reported by Hughes et al., 2010. This value is above the commonly accepted threshold of .50, signifying good convergent validity. A high AVE indicates that a substantial portion of the variance in the observed variables is explained by the Self-Regulation construct, which confirms that the items collectively have a strong and consistent relationship to the construct they are intended to measure.

The composite reliability for the Self-Regulation construct is .923, significantly exceeding the threshold of .70. This indicates excellent internal consistency among the items, meaning the

scale used to measure Self-Regulation is reliable and the items cohesively measure the construct. The Cronbach's Alpha is .930 which is desirable and given the high composite reliability, it can be inferred that the internal consistency is likely to be strong.

Overall, the metrics presented in Table 4.13 demonstrate that the Self-Regulation construct is measured effectively within the CFA model. The high factor loadings for most items and the robust AVE and CR values indicate that the construct is both reliable and valid. The scale's items, particularly the first three, are potent indicators of Self-Regulation, contributing significantly to the robustness of the construct's measurement in this research context.



4.6.6 CFA Model for Relationship Management (RM)

Five (5) items were utilized in this study for the measurement of five first-order constructs of transformational leadership namely, RM_E1, RM_E2, RM_E3, RM_E4 and RM_E5. Figure 4.10, presents the hypothesized RM CFA model along with the related 5 items.

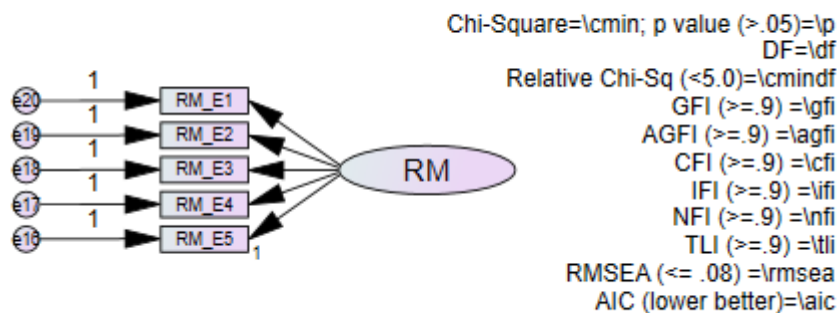


Figure 4.10 The Hypothesized RM CFA Model

4.6.6.1 Model Estimation

All five (5) indicators had statistically significant correlations with one another. The data does not deviate from the premise of normalcy, as indicated by the skewness of ± 2 (Tabachnick & Fidell, 2007) and kurtosis of ± 7 (Byrne, 2010). A statistically significant $\chi^2 (5) = 21.005$, $p = .001$ was found in the hypothesized CFA model of the five (5) items, demonstrating poor model fit with an insufficient fit between the model's inferred covariance matrix and the covariance matrix of the data that was measured.

It was discovered that other fit indices had suitable values. The GFI = .981, CFI = .993, and TLI = .985 are all below the $\geq .90$ cutoff point. Nevertheless, the RMSEA value of .085 and the normed $\chi^2/\text{df} = 4.201$ are both above the permitted range of < 3 and $\leq .08$, respectively. The RM CFA model is seen in Figure 4.11.

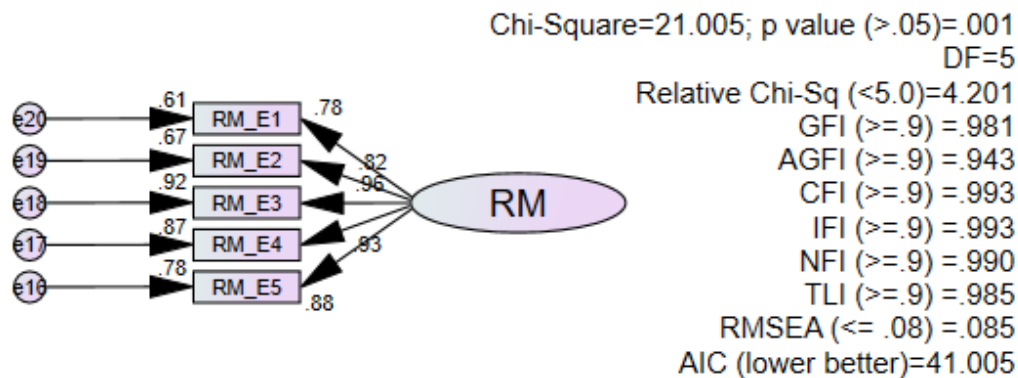


Figure 4.11 RM CFA Model

4.6.6.2 Model Re-specification

Error terms were decided to be correlated in order to improve model fit. The derived CFA model was therefore respecified. The enhanced goodness of fit indices displayed by the re-specified model overall were in line with the data. The revised model's goodness of fit indices were very high. A decent fit was found in the re-specified model, as evidenced by the normed $\chi^2/\text{df} = 5.050$ and the RMSEA value =.024 falling between the acceptable ranges of ≤ 3 and $\leq .08$. It was discovered that the values of other fit indices were sufficient. The threshold value of $\geq .90$ was exceeded by the GFI =.995, CFI =.993, and TLI =.999. The created model's fit indices and the respecified model are compared to the suggested threshold values in Table 4.14.

Table 4.14
Summary of The Fit Indices of The CFA Model of RM

Fit Indices	Accepted fit	RM Generated Model	RM Re-specified Model
Chi-square	Insignificant	21.005	5.050
<i>p</i> value*	$.001 \leq p \leq .05$	.001	.282
CMIN/DF	≤ 3	4.201	1.263
CFI	$\geq .90$	.993	1.000
TLI	$\geq .90$	.985	.999
GFI	$\geq .90$	.981	.995
RMSEA	$\leq .08$	.085	.024

Source: Kline, 2010; Schumacker & Lomax (2004); Hair et. al (2010); Hu & Bentler (1995); Byrne (2010), Fabrigar, et. al (2013). * Statistically significant at .05.

Table 4.14 indicates that the CFA model's re-specified model is within the acceptable fit index value range. As a result, there is a sufficient match between the implied covariance matrix of the model and the covariance matrix of the observed data.

Furthermore, the parameter estimations underwent analysis and were discovered to exhibit statistical significance. The loadings varied between .959 (RM_E3) and .776 (RM_E1). They demonstrated the right path and had no offensive approximations. The squared multiple correlations (SMC) showed a range of values from .602 (RM_E1) to .919 (RM_E3). The dependability of the indicators under investigation is demonstrated by the SMC, which measures how effectively the observed variables function as the latent variables' manifestations (Blunch, 2008). It's important to note that every SMC value for the updated multidimensional was higher than .25. presented strong evidence of the variance in the five observed items of the

updated SM CFA model. The re-specified CFA model of SM is shown in Figure 4.12.

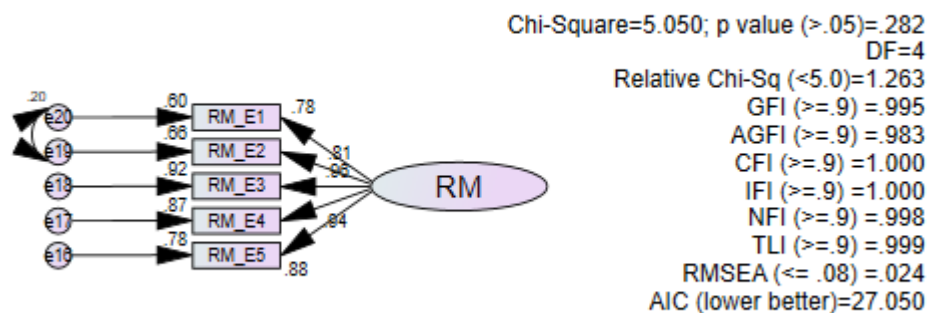


Figure 4.12 Revised CFA Model for SM

4.6.6.2.1 Reliability and Convergent Validity

The RM CFA model is put through tests for convergent validity and reliability once the construct's unidimensionality has been achieved. According to Hughes et al. (2010), three tests were specifically used to assess reliability: Cronbach's alpha, composite reliability, and average variance extracted. Convergent and discriminant validity tests were used to assess validity. Table 4.15 displays the results of the convergent validity and Cronbach's alpha for the five-item CFA model of RM.

Table 4.15

Results of Cronbach Alpha and Convergent Validity for RM of CFA Model

Construct / Variable	Item	Final Factor Loading	Average Variance Extracted (Hughes et al., 2010) ^a	Composite Reliability (CR) ^b	Internal Reliability Cronbach Alpha
Relationship-Management (RM)	RM_E1	.776	.768.	.943	.943
	RM_E2	.814			
	RM_E3	.959			
	RM_E4	.935			
	RM_E5	.885			

a: Average Variance Extracted = (summation of the factor loadings)/((summation of the square of the factor loading)+(summation of the error variance)).

b: Composite reliability = (square of the summation of the factor loadings)/((square of the summation of the factor loadings)+(square of the summation of the error variances)).

Table 4.15 provides a detailed examination of the metrics for the Relationship Management (RM) construct within a Confirmatory Factor Analysis (CFA) model, focusing on its reliability and convergent validity. The table includes several items (RM_E1 to RM_E5) designed to measure Relationship Management.

The final factor loadings demonstrate the correlation of each specific item with the Relationship Management construct. The factor loadings for the items range from .776 to .959, indicating strong correlations across all items with the construct. Higher loadings, like .959 for RM_E3 and .935 for RM_E4, suggest these items are particularly strong indicators of the construct, reflecting that they effectively capture the essence of Relationship Management.

The AVE for the Relationship Management construct is .768, as reported by Hughes et al., 2010. This value is significantly above the commonly used benchmark of .50 for adequate convergent validity, which means a large portion of the variance in these observed items is explained by the RM construct. This high AVE provides strong evidence that the items are closely related and that they accurately represent the construct of Relationship Management.

The Composite Reliability score for this construct is .943, well above the acceptable standard of .70. This high CR score indicates excellent internal consistency among the items, suggesting that the scale used to measure Relationship Management is both reliable and valid. It confirms that the items form a coherent group that consistently measures the Relationship Management

construct. The Cronbach's Alpha value is .943 and is considered good, and given the high CR, it can be inferred that Cronbach's Alpha would likely also indicate strong internal consistency.

Overall, the data in Table 4.15 illustrates that the Relationship Management construct within the CFA model is robustly measured with strong and reliable indicators. The high factor loadings and AVE suggest excellent convergent validity, while the outstanding composite reliability confirms the scale's reliability. These metrics together highlight the effectiveness of the scale in measuring Relationship Management within the framework of the study, ensuring that the construct is well-represented by the selected items.



4.6.7 CFA Model for Cognitive Ability (CA)

Five (5) items were utilized in this study for the measurement of five first-order constructs of transformational leadership namely, CA_F1, CA_F2, CA_F3, CA_F4 and CA_F5. Figure 4.13, presents the hypothesized CA CFA model along with the related 5 items.

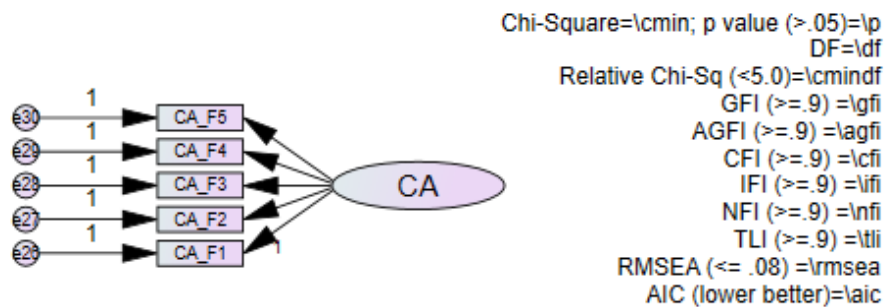


Figure 4.13 The Hypothesized CA CFA Model

4.6.7.1 Model Estimation

There was statistically significant correlation between each of the five (5) measures. With skewness between ± 2 (Tabachnick & Fidell, 2007) and kurtosis between ± 7 (Byrne, 2010), the data do not deviate from the premise of normalcy. An insufficient match was discovered between the suggested covariance matrix of the model and the covariance matrix of the actual data, as shown by the hypothesized CFA model of the five (5) items, with a $\chi^2 (5) = 605.988$, $p = .000$ statistically significant.

Inadequate values were obtained for other fit indices. The values of GFI = .760, CFI = .809, and TLI = .619 are less than the cutoff point of $\geq .90$. Nonetheless, the RMSEA value of .519 and

the normed $\chi^2/\partial f = 121.198$ both above the permissible range of ≤ 3 and $<.08$, respectively. In Figure 4.14, the CA CFA model is shown.

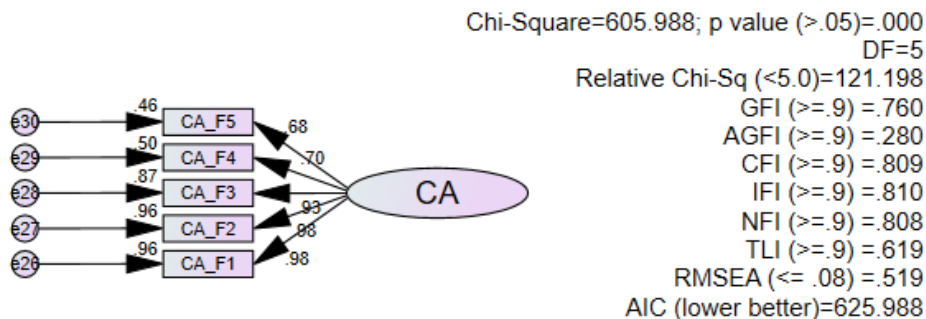


Figure 4.14 CA CFA model

4.6.7.2 Model Re-specification

Error terms were decided to be correlated in order to improve model fit. The derived CFA model was therefore respecified. The enhanced goodness of fit indices displayed by the re-specified model overall were in line with the data. The revised model's goodness of fit indices were very high. A decent fit was found in the re-specified model, as evidenced by the normed $\chi^2/\partial f = 5.504$ and the RMSEA value =.043, which lie between the acceptable ranges of ≤ 3 and $\leq .08$. It was discovered that the values of other fit indices were sufficient. The threshold value of $\geq .90$ was exceeded by the GFI =.995, CFI =.999, and TLI =.997. The created model's fit indices and the respecified model are compared to the suggested threshold values in Table 4.16.

Table 4.16
Summary of The Fit Indices of The CFA Model of CA

Fit Indices	Accepted fit	CA Generated Model	CA Re-specified Model
Chi-square	Insignificant	605.988	5.504
p value*	$.001 \leq p \leq .05$	.000	.138
CMIN/DF	≤ 3	121.198	1.835
CFI	$\geq .90$	.809	.999
TLI	$\geq .90$	.619	.997
GFI	$\geq .90$	.760	.995

RMSEA	$\leq .08$	.519	.043
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Source: Kline, 2010; Schumacker & Lomax (2004); Hair et. al (2010); Hu & Bentler (1995); Byrne (2010), Fabrigar, et. al (2013). * Statistically significant at .05.

The re-specified CFA model is within the range of the permitted fit indices values, according to Table 4.16. Consequently, this shows that the indicated covariance matrix of the model and the covariance matrix of the observed data suit each other well.

Furthermore, the parameter estimations underwent analysis and were discovered to exhibit statistical significance. The loadings varied from CA_F5 (.670) to CA_F2 (.982). They demonstrated the right path and had no offensive approximations. The squared multiple correlations (SMC) measured between .449 (CA_F5) and .965 (CA_F2) in value. The dependability of the indicators under investigation is demonstrated by the SMC, which measures how effectively the observed variables function as the latent variables' manifestations (Blunch, 2008). It's important to note that every SMC value for the updated multidimensional was higher than .25, presented strong evidence of the variance in the five observed items of the updated CA CFA model. The re-specified CA CFA model is shown in Figure 4.15.

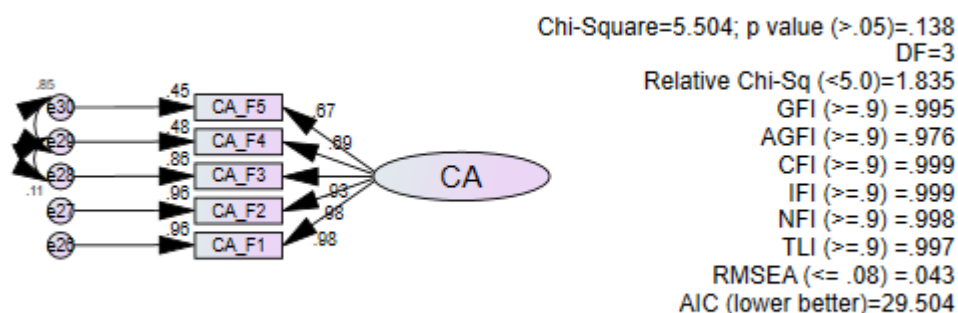


Figure 4.15 Revised CFA Model for CA

4.6.7.2.1 Reliability and Convergent Validity

Reliability and convergent validity tests are performed on the CFA model of CA following the attainment of unidimensionality. To be more specific, three tests were used to assess reliability: Cronbach's alpha, composite reliability, and average variance extracted (Hughes et al., 2010). Convergent and discriminant validity tests were used to assess validity. Table 4.17 lists the results of the convergent validity and Cronbach's alpha for the five-item CFA model of CA.

Table 4.17

Results of Cronbach Alpha and Convergent Validity for CA of CFA Model

Construct / Variable	Item	Final Factor Loading	Average Variance Extracted (Hughes et al., 2010) ^a	Composite Reliability (CR) ^b	Internal Reliability Cronbach Alpha
Cognitive-Ability (CA)	CA_F1	.979	.743	.934	.938
	CA_F2	.982			
	CA_F3	.929			
	CA_F4	.692			
	CA_F5	.670			

a: Average Variance Extracted = (summation of the factor loadings)/((summation of the square of the factor loading)+(summation of the error variance)).

b: Composite reliability = (square of the summation of the factor loadings)/((square of the summation of the factor loadings)+(square of the summation of the error variances)).

Table 4.15 provides insights into the Cronbach Alpha and convergent validity for the Cognitive Ability (CA) construct within a Confirmatory Factor Analysis (CFA) model. This construct is

assessed through various items (CA_F1 to CA_F5), each representing different facets of cognitive ability.

The factor loadings represent how strongly each item correlates with the cognitive ability construct. The loadings for items CA_F1 (.979), CA_F2 (.982), and CA_F3 (.929) are very high, indicating a strong association with the construct, suggesting that these items are highly effective at measuring aspects of cognitive ability. Conversely, items CA_F4 (.692) and CA_F5 (.670) show relatively lower loadings, which while still significant, indicate a weaker correlation with the overall construct.

The AVE for the cognitive ability construct is .743, as cited from Hughes et al., 2010. This value exceeds the threshold of .50, typically used to establish good convergent validity. A higher AVE value suggests that the construct explains a significant proportion of the variance in its items, indicating that the items are not only related to each other but also effectively capture the essence of cognitive ability.

The composite reliability for cognitive ability is .934, which is well above the standard .70 benchmark, denoting excellent internal consistency among the items. This high CR value confirms that the items cohesively measure the cognitive ability construct, ensuring that the scale is both reliable and valid. The Cronbach's Alpha for this construct is .938. Given the high CR, it can be inferred that the Cronbach's Alpha would also reflect strong internal consistency.

Overall, the results from Table 4.17 demonstrate that the cognitive ability construct is robustly measured within the CFA model. The high factor loadings, especially on the first three items, alongside the substantial AVE and excellent CR, illustrate a strong and reliable measurement framework. These results indicate that the scale is highly effective in capturing and reflecting the construct of cognitive ability, making it a valuable tool in the study's analysis.

4.6.8 CFA Model for Job Performance (JP)

Five (5) items were utilized in this study for the measurement of five first-order constructs of transformational leadership namely, JP_G1, JP_G2, JP_G3, JP_G4 and JP_G5. Figure 4.16, presents the hypothesized JP CFA model along with the related 5 items.

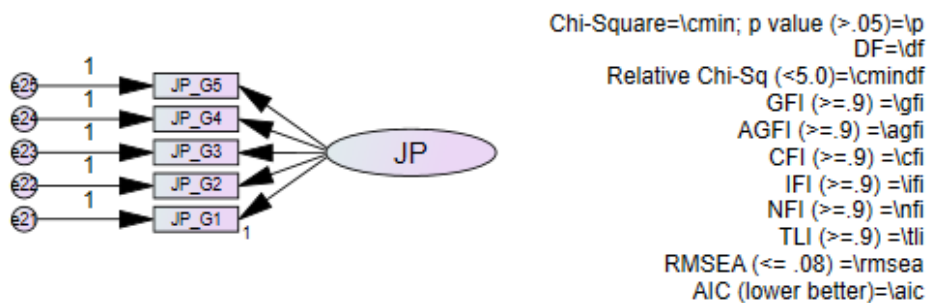


Figure 4.16 The Hypothesized JP CFA Model

4.6.8.1 Model Estimation

All five (5) indicators showed statistically significant interrelationships. Since the kurtosis was between ± 7 (Byrne, 2010) and the skewness was within ± 2 (Tabachnick & Fidell, 2007), the data does not deviate from the premise of normalcy. The five (5) items in the anticipated CFA model had a poor model fit, as indicated by the statistically significant $\chi^2 (5) = 116.975$, $p = .000$, which shows an insufficient fit between the suggested covariance matrix of the model and the covariance matrix of the observed data.

Other fit indices, such as CFI = .961 and TLI = .922, were found to have sufficient values; nevertheless, GFI = .899 is below the $\geq .90$ cutoff value. On the other hand, the RMSEA value of .224 and the normed $\chi^2/\text{df} = 116.975$ both exceed the permissible range of < 3 and $\leq .08$, respectively. The JP CFA model is shown in Figure 4.17.

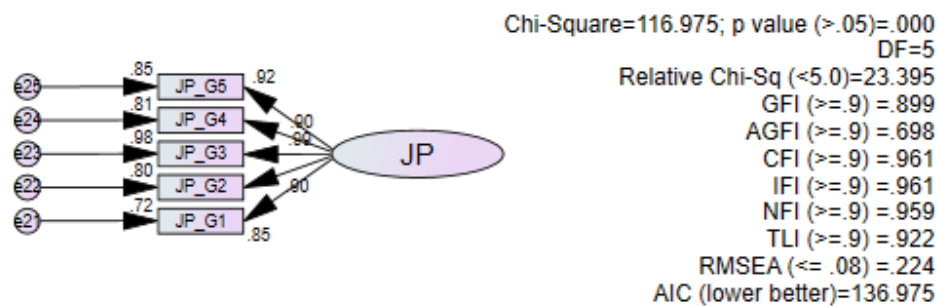


Figure 4.17 JP CFA Model

4.6.8.2 Model Re-specification

To improve model fit, the choice was made to correlate error terms. As a result, the CFA model that was created was revised. A better goodness of fit index was demonstrated by the re-specified model overall, and this was in line with the data. The re-specified model had significant goodness of fit indices. The re-specified model demonstrated satisfactory fit, as evidenced by the normed $\chi^2/df = 7.681$ and the RMSEA value = .059. These values lie within the acceptable range of ≤ 3 and $\leq .08$, respectively. It was also discovered that other fit indices had suitable values. Over the threshold value of $\geq .90$, the GFI = .993, CFI = .998, and TLI = .995 were found to be. The fit indices of the produced model, the re-specified model, and the suggested threshold values are compared in Table 4.18.

Table 4.18
Summary of The Fit Indices of The CFA Model of JP

Fit Indices	Accepted fit	JP Generated Model	JP Re-specified Model
Chi-square	Insignificant	116.975	7.681
p value*	$.001 \leq p \leq .05$	.000	.053
CMIN/DF	≤ 3	23.395	2.560
CFI	$\geq .90$	.961	.998
TLI	$\geq .90$	.922	.995
GFI	$\geq .90$	.899	.993
RMSEA	$\leq .08$	.224	.059

Source: Kline, 2010; Schumacker & Lomax (2004); Hair et. al (2010); Hu & Bentler (1995); Byrne (2010), Fabrigar, et. al (2013). * Statistically significant at .05.

Table 4.18 indicates that the CFA model's re-specified model is within the acceptable fit index value range. As a result, there is a sufficient match between the implied covariance matrix of the model and the covariance matrix of the observed data.

Furthermore, a statistically significant result was obtained after examining the parameter estimates. From .835 (JP_G1) to 1.004 (JP_G3), the loadings varied. They displayed the right path and were devoid of any offensive approximations. The JP_G1) and JP_G3) have squared multiple correlations (SMC) ranging from .698 to 1.008. As a measure of the dependability of the indicators under investigation, the SMC shows how effectively the observed variables function as the latent variables' manifestations (Blunch, 2008). It is noteworthy that all SMC values for the updated multidimensional were higher than .25. presented strong evidence of the variance in the five observed elements of JP's revised CFA model.

The re-specified JP CFA model is shown in Figure 4.18.

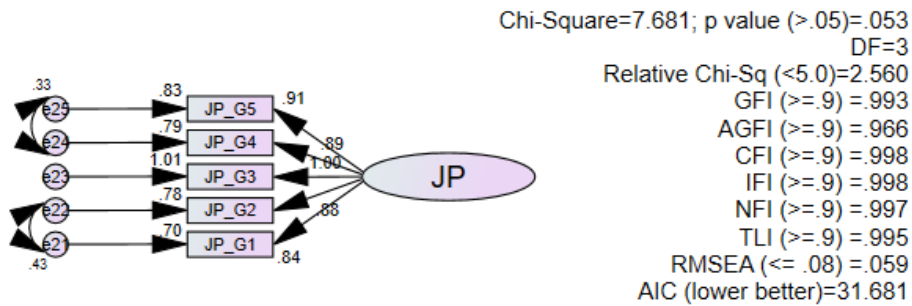


Figure 4.18 Revised CFA Model for JP

4.6.8.2.1 Reliability and Convergent Validity

Reliability and convergent validity tests are performed on the CFA model of RM following the attainment of unidimensionality. To be more specific, three tests were used to assess reliability: Cronbach's alpha, composite reliability, and average variance extracted (Hughes et al., 2010). Convergent and discriminant validity tests were used to assess validity. Table 4.19 presents the outcomes of the convergent validity as well as Cronbach's alpha for the five-item CFA model of CA.

Table 4.19
Results of Cronbach Alpha and Convergent Validity for JP of CFA Model

Construct / Variable	Item	Final Factor Loading	Average Variance Extracted (Hughes et al., 2010) ^a	Composite Reliability (CR) ^b	Internal Reliability Cronbach Alpha
Job-Performance (JP)	JP_G1	.835	.819.	.958	.961
	JP_G2	.881			
	JP_G3	1.004			
	JP_G4	.889			
	JP_G5	.909			

a: Average Variance Extracted = (summation of the factor loadings)/((summation of the square of the factor loading)+(summation of the error variance)).

b: Composite reliability = (square of the summation of the factor loadings)/((square of the summation of the factor loadings)+(square of the summation of the error variances)).

Table 4.19 provides the validation metrics for the Job Performance (JP) construct as part of a Confirmatory Factor Analysis (CFA) model, detailing the reliability and validity of the construct as assessed through specific items (JP_G1 to JP_G5).

Final factor loadings indicate the strength of the association each item has with the job performance construct. The loadings are quite strong across all items, with JP_G3 notably high at 1.004, suggesting a potential scaling issue or a very strong relation to the construct. Other items like JP_G2 (.881), JP_G4 (.889), and JP_G5 (.909) also display high loadings, indicating that they are effective indicators of job performance.

The AVE for the job performance construct is .819, as cited from Hughes et al., 2010. This exceeds the commonly accepted threshold of .50 for demonstrating good convergent validity, indicating that the construct explains a significant proportion of the variance in its items. This high AVE provides strong evidence that the items not only relate closely to each other but also accurately represent the job performance construct.

The CR for job performance stated at .958, which is well above the standard threshold of .70, reflecting excellent internal consistency among the items. This high CR score confirms that the items cohesively measure the job performance construct, ensuring that the scale is both reliable and valid. The Cronbach's Alpha for this construct is .961 to further confirm the internal consistency to the items stated at the reliable scale.

Overall, metric shown in Table 4.19 demonstrate that job performance construct is robustly measured within the CFA model. The strong factor loadings and substantial AVE indicate excellent convergent validity, while the outstanding composite reliability confirms the scale's reliability. These results highlight the effectiveness of the scale in measuring job performance, ensuring that the construct is well-represented by the selected items in the context of the study. This robust measurement framework makes the job performance scale a valuable tool for analyzing the impacts of various factors on job performance.

4.7 The Measurement Model

4.7.1 Model Specification

The six (6) variables in the measuring model are: job performance, relationship management (RM), self-awareness (SA), self-motivation (SM), self-regulation (SM), and cognitive ability (CA). Except for SM, each variable has five (5) items. The proposed measuring model is shown in Figure 4.19.

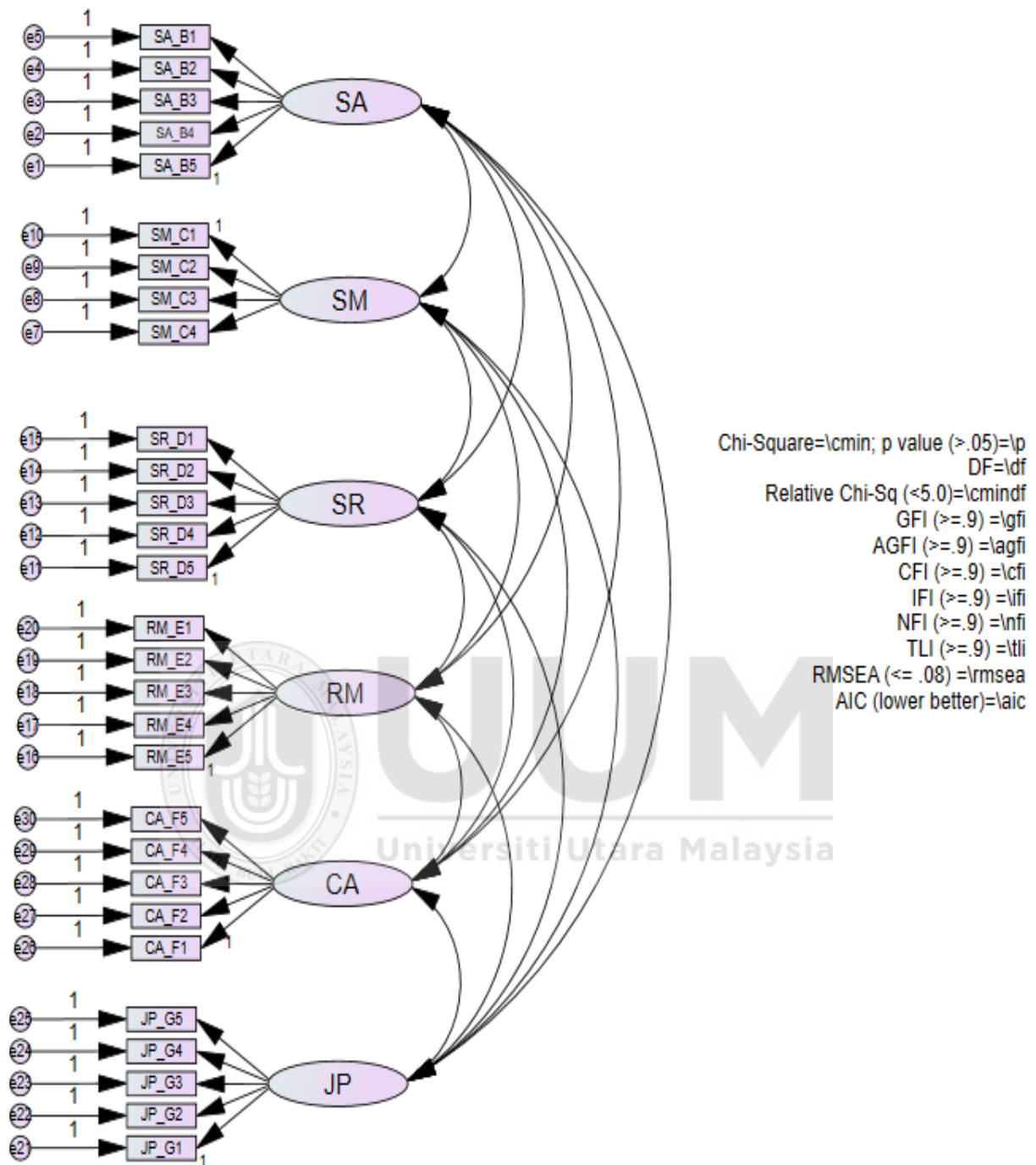


Figure 4.19: Hypothesized Measurement Model

Note. SL = Job Performance (JP), Cognitive Ability (CA), Self-awareness (SA), Self-motivation (SM) and Relationship Management (RM)

4.7.1.1 Model Estimation

There was statistical significance in the correlations between all 29 items. A range of skewness of ± 2 (Tabachnick & Fidell, 2007) and kurtosis of ± 7 (Byrne, 2010), the data do not deviate from the premise of normalcy. There was insufficient match among the implied covariance matrix of the model and the covariance matrix of the observed data, as shown by the measurement model's poor model fit ($\chi^2 (362) = 4053.807$, $p = .000$, which is statistically significant).

Inadequate results were also reported for other fit indices. The values of GFI = .616, CFI = .818, and TLI = .796 are below the cutoff point of $\geq .90$. The RMSEA value of .151 and the normed $\chi^2/\text{df} = 11.198$ were both outside of the allowable range of < 3 and $\leq .08$, respectively. The estimations for the parameters vary from .634 to .980. According to Byrne (2010), loadings shouldn't be less than .5 or greater than 1. Consequently, the sample data did not fit the model. The measurement model created is shown in Figure 4.20.

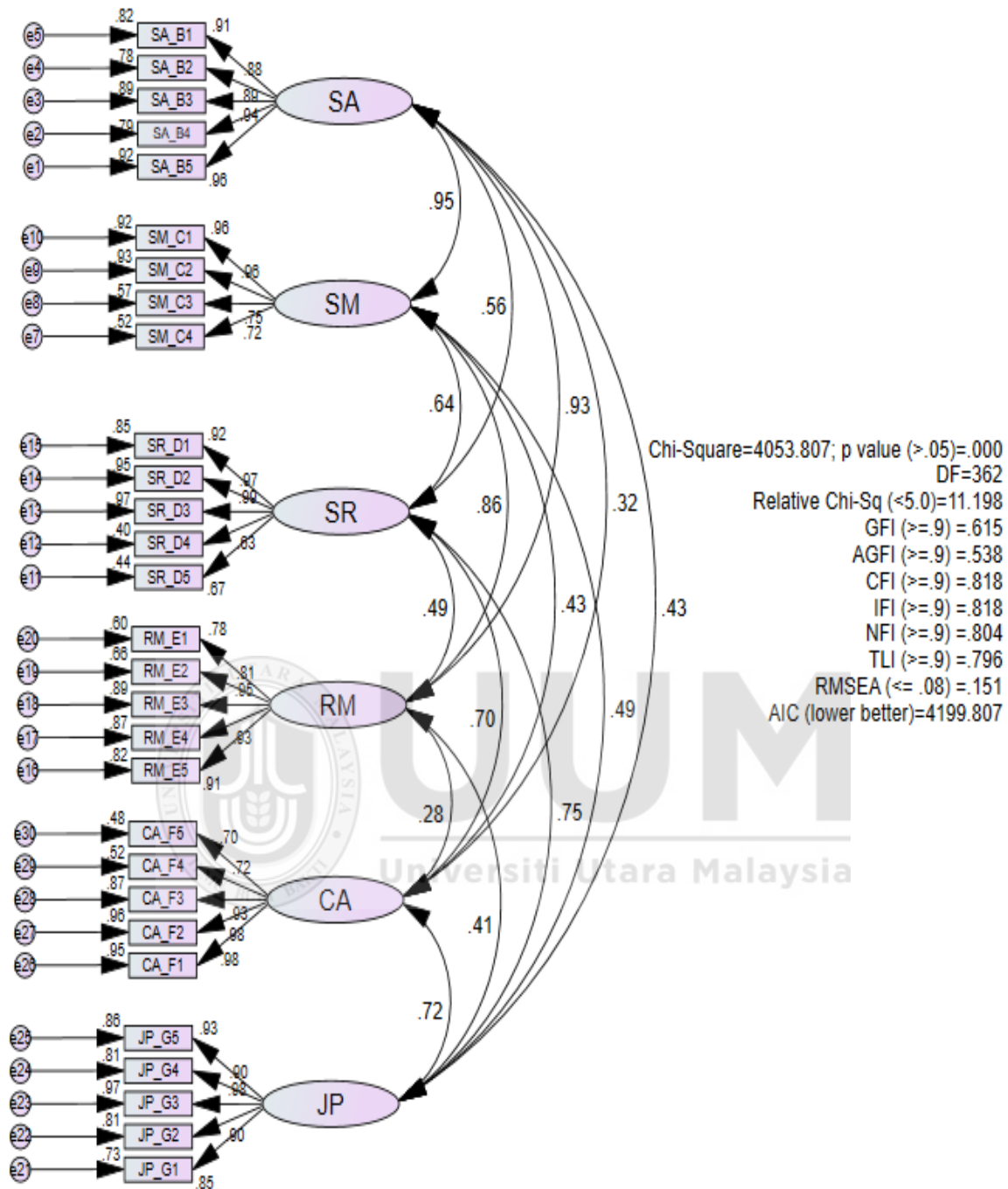


Figure 4.20 Generated Measurement Model

Note. SL = Job Performance (JP), Cognitive Ability (CA), Self-awareness (SA), Self-motivation (SM) and Relationship Management (RM)

4.7.1.2 Model Re-specification

A revised specification for the measuring model was made. A small number of additional items are eliminated when their standardized residual covariance values exceed 7. Of the six variables, one (1) was removed from SM and two (2) from CA and SR, respectively. To attain model fit, a total of five (6) elements out of thirty were eliminated. The connections between e1-e2, e3-e4, e4-e5, e19-e20, and e21-e22 were among the seven (7) inter-correlations amongst the 11 faults that were then released based on the recommendations of MIs.

A better goodness of fit index was demonstrated by the re-specified model overall, and this was in line with the data. The re-specified model had significant goodness of fit indices. The updated model exhibited fair fit, as evidenced by the normed $\chi^2/\text{df} = 4.349$ and the RMSEA value = .087 falling between the marginal ranges of $\leq .81$ and < 1 , respectively. It was also discovered that other fit indices had suitable values. The values of TLI = .943, NFI = .939, and CFI = .952 exceeded the cutoff point of $\geq .90$. Table 4.20 compares the fit indices of the created and re-specified models, as well as the suggested threshold values.

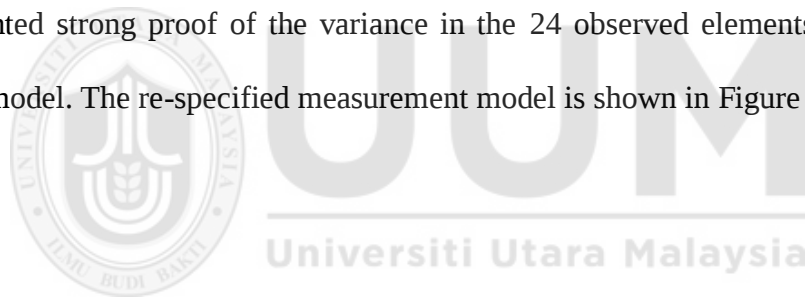
Table 4.20
Summary of the Fit Indices of the Measurement Model

Fit Indices	Accepted fit	Generated Model	Re-specified Model
Chi-square	Insignificant	4053.807	1008.855
<i>p</i> value*	$.001 \leq p \leq .05$	.000	.000
CMIN/DF	≤ 3	11.198	4.349
CFI	$\geq .90$	.818	.952
NFI	$\geq .90$	.804	.939
TLI	$\geq .90$	.796	.943
RMSEA	$.08 \leq \leq .1$	.151	.087

Source: Kline, 2010; Schumacker & Lomax (2004); Hair et. al (2010); Hu & Bentler (1995); Byrne (2010), Fabrigar, et. al (2013). *Statistically significant at .05.

Table 4.20 indicates that the re-specified model is at the acceptable range of fit index values. As a result, there is a sufficient match among the implied covariance matrix of the model and the covariance matrix of the observed data.

Furthermore, the parameter estimations underwent analysis and were discovered to exhibit statistical significance. The loadings varied between .987 (SR_D3) and .736 (SM_C3). They demonstrated the right path and had no offensive approximations. The squared multiple correlations (SMC) had values ranging from .974 (SR_D3) to .541 (SM_C3). The dependability of the indicators under investigation is demonstrated by the SMC, which measures how effectively the observed variables function as the latent variables' manifestations (Blunch, 2008). It is noteworthy that every SMC value for the re-specified multidimensional was more than .25, presented strong proof of the variance in the 24 observed elements of the revised measurement model. The re-specified measurement model is shown in Figure 4.21.



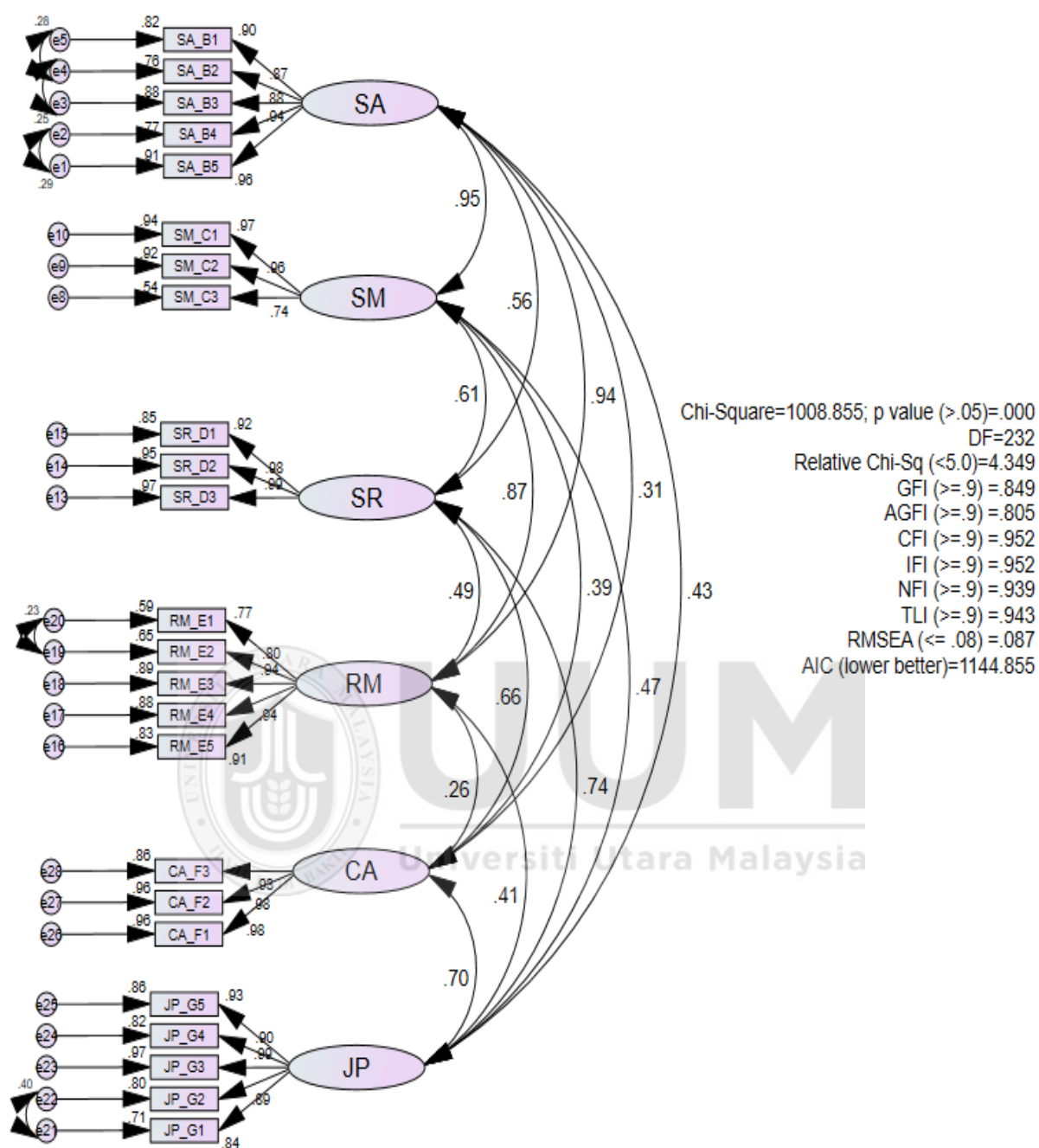


Figure 4.21 Re-specified Measurement Model

Note. SL = Job Performance (JP), Cognitive Ability (CA), Self-awareness (SA), Self-motivation (SM) and Relationship Management (RM)

The revised measurement model fits the sample data based on Figure 4.21. To measure the discriminant validity of the re-specified measurement model, more investigation is needed. The re-specified measurement model's squared correlations and average variance extract (AVE) are compiled in Table 4.21.

Table 4.21
Summary of the AVE and the Squared Correlations of the Re-specified Measurement Model

	SA	SM	SR	RM	CA	JP
SA	.827					
SM	.903	.800				
SR	.372	.313	.924			
RM	.240	.757	.884	.767		
CA	.007	.436	.152	.100	.831	
JP	.490	.168	.548	.221	.185	.929

Note: Diagonals represent the average variance extracted while the other entries represent the squared correlations

In verifying discriminant validity, one (1) variable's AVE needs to be grander than the squared correlations of the other variables. Except for the squared correlation values of SA – SM, all constructs met the criteria for discriminant validity, as shown in Table 4.21. The structural model requires additional analysis of the variables.

4.8 The Structural Model

After the measurement model has been validated, the second crucial stage in the SEM analysis is to create the structural equation model, which may be stated using the relationships between the constructs. According to Hair et al. (2006) and Ho (2006), it provides detailed information on the connections between the endogenous and external factors. The path diagrams' one-headed arrows indicate that the structural model evaluation prioritizes the size, direction, and

significance of the estimated parameter estimations in addition to the overall model fit (Hair et al., 2006).

The confirmation of the structural model based on the postulated relationships was the second aspect of the investigation. The structural model of the study used maximum likelihood estimate (MLE) as the regression approach and AMOS to analyze the hypotheses. Examined were the correlations between the study variables (transformational leadership, genuine leadership, and the mediating role of organizational culture on the link between these three variables and turnover intention). The structural model developments in testing research ideas are demonstrated with codes and descriptions in the upcoming subsections. The standardized regression weights and the study's structural model are shown in Table 4.22

Table 4.22
Research Hypotheses Codes and Descriptions

Code	Description	Path
Direct Effect Constructs		
H1 ⁺	There is a positive relationship between emotional intelligence (self-awareness) and agricultural extension agents' job performance.	SA → JP
H2 ⁺	There is a positive relationship between emotional intelligence (self-motivation) and agricultural extension agents' job performance.	SM → JP
H3 ⁺	There is a positive relationship between emotional intelligence (self-regulation) and agricultural extension agents' job performance.	SR → JP
H4 ⁺	There is a positive relationship between emotional intelligence (relationship management) and agricultural extension agents' job performance.	RM → JP

H5 ⁺	There is a positive relationship between emotional intelligence (self-awareness) and cognitive ability.	SA → CA
H6 ⁺	There is a positive relationship between emotional intelligence (self-motivation) and cognitive ability.	SM → CA
H7 ⁺	There is a positive relationship between emotional intelligence (self-regulation) and cognitive ability.	SR → CA
H8 ⁺	There is a positive relationship between emotional intelligence (relationship management) and cognitive ability.	RM → CA
H9 ⁺	There is a positive relationship between cognitive ability and agricultural extension agents' job performance.	CA → JP

Mediation Effects of Cognitive Ability (CA)

H10 ⁺	Cognitive ability will mediate the relationship between emotional intelligence (self-awareness) and agricultural extension agents' job performance.	SA → CA → JP
H11 ⁺	Cognitive ability will mediate the relationship between emotional intelligence (self-motivation) and agricultural extension agents' job performance.	SM → CA → JP
H12 ⁺	Cognitive ability will mediate the relationship between emotional intelligence (self-regulation) and agricultural extension agents' job performance.	SR → CA → JP
H13 ⁺	Cognitive ability will mediate the relationship between emotional intelligence (relationship management) and agricultural extension agents' job performance.	RM → CA → JP

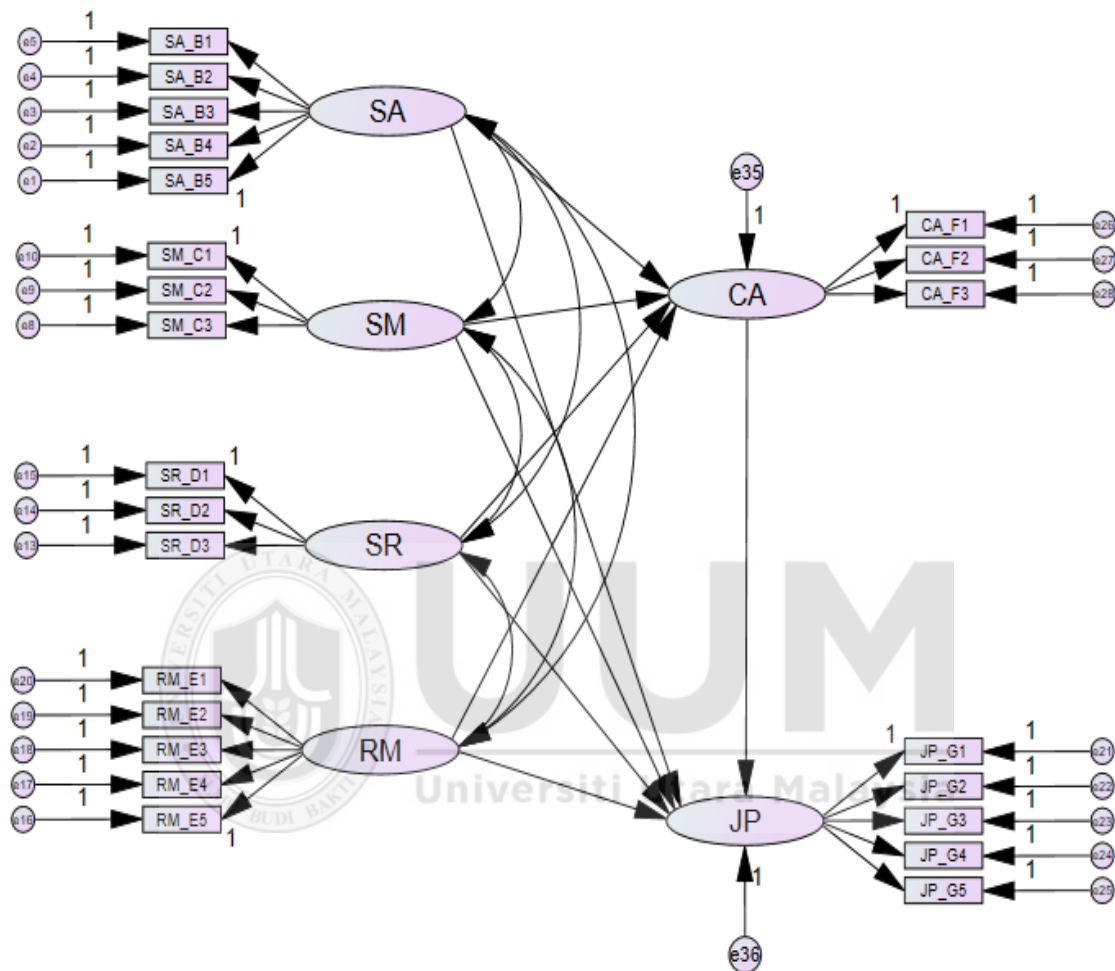
4.8.1 Model Specification

The hypothesized structural model of TVESAI consisted of 24 manifest items from six (6) variables. Self-awareness (SA), Relationship Management (RM) and Job Performance consists

of five items respectively. The remaining variables, Self-management (SM), Self-regulation (SR) and Cognitive Ability (CA) consist of three items respectively.

Using the same CFA and measurement model analysis technique, the proposed model was statistically tested using the goodness of fit indices (normed $\chi^2/\partial f$, RMSEA, GFI, CFI, and TLI). The proposed structural model is shown in Figure 4.22.





Chi-Square= χ^2 ; p value ($>.05$)= p
 DF=df
 Relative Chi-Sq (<5.0)= χ^2/df
 GFI ($\geq .9$)= gfi
 AGFI ($\geq .9$)= $agfi$
 CFI ($\geq .9$)= cfi
 IFI ($\geq .9$)= ifi
 NFI ($\geq .9$)= nfi
 TLI ($\geq .9$)= $tlfi$
 RMSEA ($\leq .08$)= $rmsea$
 AIC (lower better)= aic

Figure 4.22 The Hypothesized Structural Model

Note. SL = Job Performance (JP), Cognitive Ability (CA), Self-awareness (SA), Self-motivation (SM) and Relationship Management (RM)

4.8.2 Model Estimation

The data gathered from the sample of 448 employees in agro-based industries was used to estimate the proposed structural model using machine learning. The goodness of fit indicators that were used in the previous section of the investigation were used to assess the model's output.

The proposed structural model's results showed values that were ill-fitting. The statistically significant $\chi^2 (237) = 1183.457, p = .000$ indicates a poor match between the indicated covariance matrix of the model and the covariance matrix of the observed data. It was also discovered that other fit indices, GFI = .823, had insufficient values that were below the cutoff point of $\geq .90$. Furthermore, there was inadequate fitting with RMSEA = .095 as well.

Apart from the direct path coefficient between SA $\rightarrow$ CA and SM $\rightarrow$ JP, certain path coefficients were reasonably large and favorably oriented. With low fit index values and objectionable estimates, the proposed model needs to be altered in favor of a better fitting model. Figure 4.23 shows the structural model that was developed.

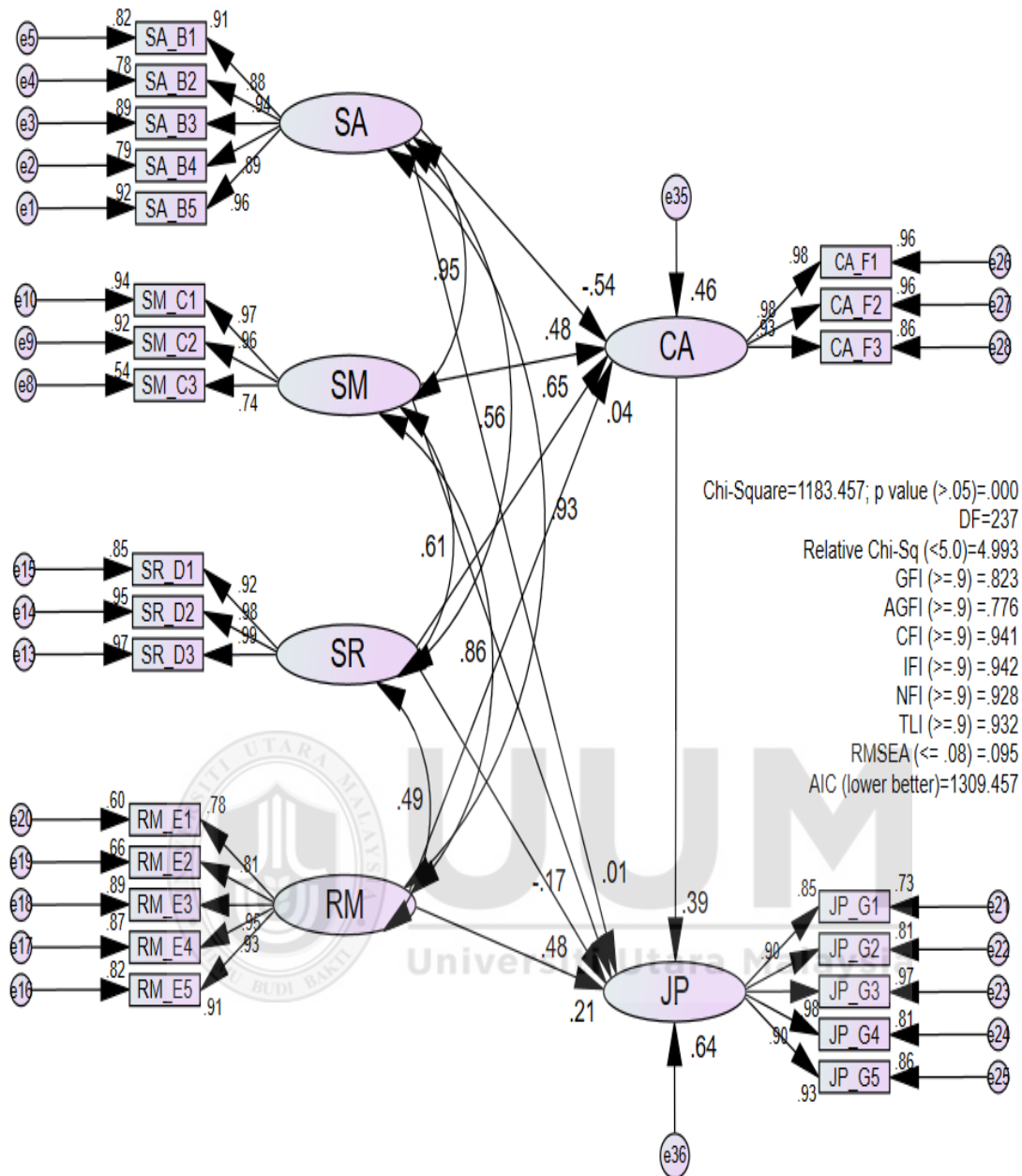


Figure 4.23 The Generated Structural Model

Note. SL = Job Performance (JP), Cognitive Ability (CA), Self-awareness (SA), Self-motivation (SM) and Relationship Management (RM)

4.8.3 Model Re-specification

Finding a better fit is the goal of the revised model. Consequently, Post Hoc MIs were examined to find a more frugal model. Based on the recommendations of MI, several intercorrelations between two (2) mistakes were released. By decreasing the χ^2 value from 1183.457 (the generated model) to 1000.041 (the re-specified model) due to the co-varied link, the fit indices have increased. Six (6) linked measurement mistakes providing theoretical evidence of communalities between manifest variable pairs.

A better goodness of fit index was demonstrated by the re-specified model overall, and this was in line with the data. The re-specified model showed significant goodness of fit indices. The revised model showed satisfactory fit, as evidenced by the normed $\chi^2/\text{df} = 4.329$ and the RMSEA value = .086 falling between the acceptable range of ≤ 3 and $\leq .1$. It was also discovered that other fit indices had suitable values. The values of IFI = .953, CFI = .952, and TLI = .943 were greater than the cutoff point of $\geq .90$. The fit indices of the produced model, the re-specified model, and the suggested threshold values are compared in Table 4.23.

Table 4.23
Summary of the Fit Indices of the Structural Model

Fit Indices	Accepted fit	Generated Model	Re-specified Model
Chi-square	Insignificant	1183.457	1000.041
<i>p</i> value*	$.001 \leq p \leq .05$	.000	.000
CMIN/DF	≤ 3	4.993	4.329
CFI	$\geq .90$	.941	.952
TLI	$\geq .90$	.932	.943
NFI	$\geq .90$	.928	.939
RMSEA	$\leq .1$	.095	.086

Source: Kline (2010); Schumacker & Lomax (2004); Hair et. Al (2010); Hu & Bentler (1995);

Byrne (2010). *Statistically significant at .05.

A statistically significant analysis of the parameter estimations was also discovered. Ranged from .737 (SM_C3) to .992 (JP_G3) were the loadings. They displayed logical direction and were devoid of any offensive estimation. In a similar vein, the SMC values for the revised model satisfied the criterion of .25 or above for every indicator. The results varied between .75 (JP_G3) and .543 (SM_C3). In terms of explaining the variance of the 24 components in the re-specified structural model, this offered significant values. Figure 4.24 shows the structural model that has been re-specified.

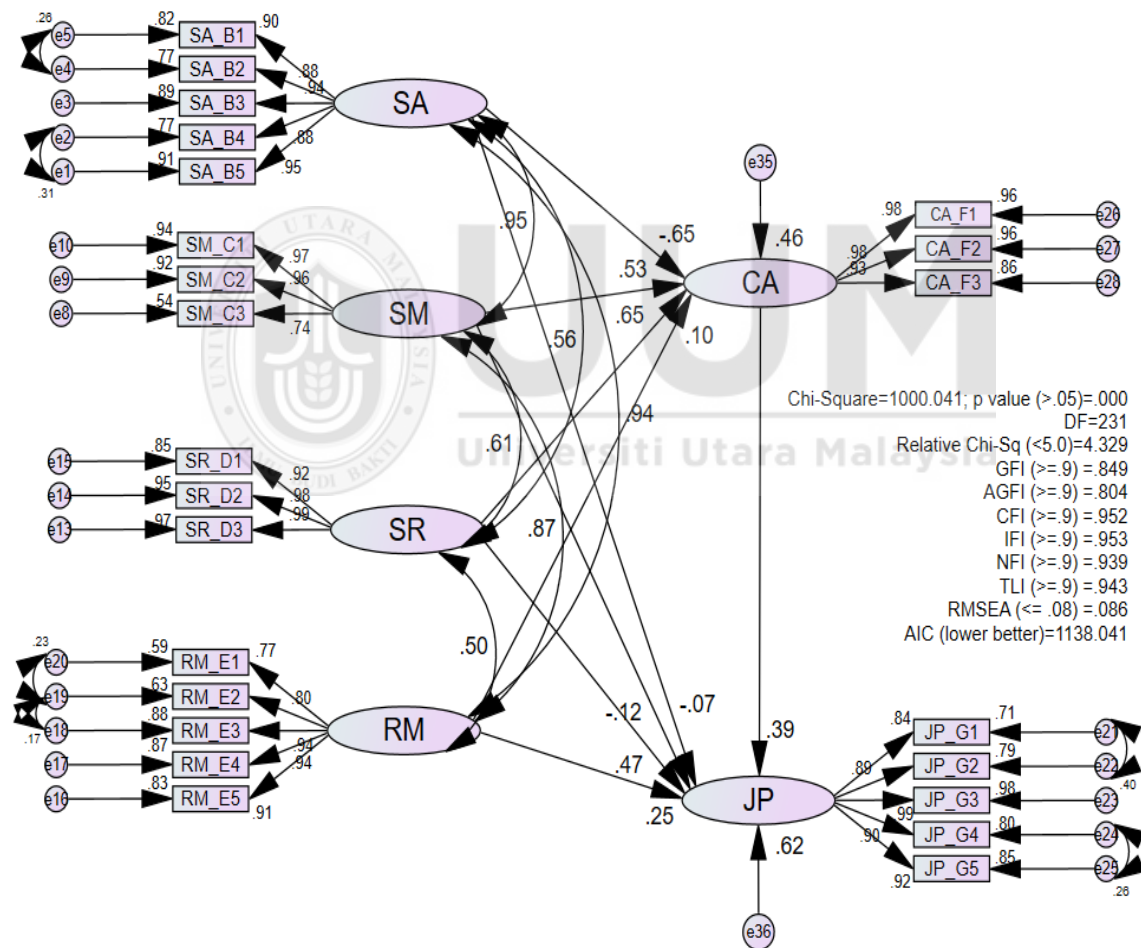


Figure 4.24 The Re-specified Structural Model

Note. SL = Job Performance (JP), Cognitive Ability (CA), Self-awareness (SA), Self-motivation (SM) and Relationship Management (RM)

4.9 Direct Effects of Constructs (Path Analysis)

By looking at the estimations of the coefficient parameters, the predicted direct effects of the variables were put to the test. Table 4.24 shows the path coefficients and the findings from the analysis of the proposed direct effects.

Table 4.24
Examining Results of Hypothesized Direct Effects of the Constructs

Path	Unstandardised		Standardize	Critical	p-value	Hypothesis
	Estimate	S.E.	d Estimate			
	Estimate	S.E.	Beta	(C.R)		Results
SA → JP	-.057	.185	-.074	-.308	.758	H1 Not Supported
SM → JP	-.097	.121	-.124	-.806	.420	H2 Not Supported
SR → JP	.387	.043	.465	9.112	***	H3 Supported
RM → JP	.198	.101	.251	1.970	***	H4 Supported
SA → CA	-.475	.212	-.648	-2.237	.025	H5 Supported
SM → CA	.393	.137	.527	2.865	.004	H6 Supported
SR → CA	.512	.039	.649	13.016	***	H7 Supported
RM → CA	.068	.118	.096	.582	.561	H8 Not Supported
CA → JP	.414	.047	.392	8.846	***	H9 Supported

The table summarizes the results of testing the direct effects of various constructs on job performance (JP) and Cognitive ability (CA). The constructs tested include Self-awareness (SA), Self-motivation (SM), Self-regulation (SR), and Relationship Management (RM).

H1: There is a positive relationship between emotional intelligence (self-awareness) and agricultural extension agents' job performance.

The hypothesized positive effect of SA on JP was not supported, as indicated by a negative unstandardized estimate (-.057) and a nonsignificant p-value (.758). This suggests that SA does not significantly impact JP in the tested model.

H2: There is a positive relationship between emotional intelligence (self-motivation) and agricultural extension agents' job performance.

Similar to SA, the effect of SM on JP was also not supported, with a negative unstandardized estimate (-.097) and a nonsignificant p-value (.420). This result indicates that SM do not have a measurable impact on JP in the context studied.

H3: There is a positive relationship between emotional intelligence (self-regulation) and agricultural extension agents' job performance.

Unlike SA and SM, SR showed a significant positive effect on JP, with an unstandardized estimate of .387 and a highly significant p-value (indicated by ***). The high critical ratio (9.112) confirms that SR is a significant predictor of JP, supporting the hypothesis.

H4: There is a positive relationship between emotional intelligence (relationship management) and agricultural extension agents' job performance.

The hypothesis that RM positively affects JP was supported, evidenced by a critical ratio (1.970) and a p-value (indicated***). This supports the idea of higher RM will affected quality of JP.

H5: There is a positive relationship between emotional intelligence (self-awareness) and cognitive ability.

This path showed a significant negative effect, with an unstandardized estimate of $-.475$ and a significant p-value ($.025$). This suggests that higher SA might negatively impact CA, contrary to what might be intuitively expected.

H6: There is a positive relationship between emotional intelligence (self-motivation) and cognitive ability.

SM had a positive and significant impact on CA, with an estimate of $.393$ and a p-value of $.004$. This indicates that effective SM are likely to enhance CA.

H7: There is a positive relationship between emotional intelligence (self-regulation) and cognitive ability.

SR also positively influenced CA, demonstrated by a strong unstandardized estimate ($.512$) and an extremely significant critical ratio (13.016). This supports the idea that SR significantly enhances CA.

H8: There is a positive relationship between emotional intelligence (relationship management) and cognitive ability.

The effect of RM on CA was not significant, with a p-value of $.561$, suggesting that risk RM in this context does not significantly impact CA.

H9: There is a positive relationship between cognitive ability and agricultural extension agents' job performance.

There is a strong and significant positive relationship between CA and JP, as shown by an unstandardized estimate of .414 and a critical ratio of 8.846. This finding strongly supports the hypothesis that better CA leads to better JP.

4.10 Testing the Indirectional Effects among the Variables of the Study

RQ: Does Cognitive Ability mediate the relationship between Self-awareness and Job Performance?

RH: Cognitive Ability mediates the relationship between Self-awareness and Job Performance

RQ: Does Cognitive Ability mediate the relationship between Self-motivation and Job Performance?

RH: Cognitive Ability mediates the relationship between Self-motivation and Job Performance

RQ: Does Cognitive Ability mediate the relationship between Self-regulation and Job Performance?

RH: Cognitive Ability mediates the relationship between Self-regulation and Job Performance

RQ: Does Cognitive Ability mediate the relationship between Relationship Management and Job Performance?

RH: Cognitive Ability mediates the relationship between Relationship Management and Job Performance

Testing each hypothesis is necessary in order to provide a response to each research topic. The variables must have a rational direct causal effect on one another and a significant link between them at $p = .05$ ($C.R > 1.96$) in order for the hypothesis to be validated.



The results obtained from the mediating hypothesis testing are presented in Table 4.25 along with the standardized effects of various paths.

Table 4.25
Results of Examining Mediation Effects of Cognitive Ability

DV = Job Performance		Independent Variables (IV)			
M = Cognitive Ability (CA)	Self-Awareness (SA)	Self-Motivation (SM)	Self-Regulation (SR)	Relationship Management (RM)	
Total Effect of IV on DV	-.078	-.122	.383	.250	
without M (path a)	(p=.740)	(p=.424)	(p=.008)	(p=.058)	
Direct Effect of IV on DV	-.074	-.124	.465	.251	
with M (path a')	(p=.758)	(p=.420)	(p=.000)	(p=.062)	
Indirect Effect of IV on DV	-.	.207	.254	.038	
through M (path bc)	(p=.000)	(p=.000)	(p=.000)		
Effect of IV on M (path b)	-.254	.527	.649	.096	
	(p=.025)	(p=.004)	(p=.000)	(p=.561)	
Effect of M on DV (path c)	.392	.392	.392	.392	
	(p=.000)	(p=.000)	(p=.000)	(p=0.00)	
Mediation path	SA→CA→JP	SM→CA→JP	SR→CA→JP	RM→CA→JP	
Mediation Effect	Yes	Yes	Yes	No	
Degree of Mediation	Full	Full	Full	NA	
Hypothesis Result	Supported	Supported	Supported	Not Supported	

Table 4.25 provides an analysis of how cognitive ability (CA) mediates the effects of various independent variables (IVs) on job performance (JP), with the IVs being components of emotional intelligence: Self-Awareness (SA), Self-Motivation (SM), Self-Regulation (SR), and Relationship Management (RM).

4.10.1 Cognitive Ability mediates the relationship between Self-awareness and Job Performance

Total Effect of SA (without CA) shows a small negative effect on JP, which is not statistically significant ($p=.740$). Similar to the total effect, the direct influence of SA on JP is also minor and not significant ($p=.758$). Nevertheless, the mediation effect via CA is significant, indicating that CA fully mediates the relationship between SA and JP. The changes in CA due to SA significantly affect job performance. Hence, the hypothesis that CA mediates the effect of SA on JP is supported, indicating full mediation.

4.10.2 Cognitive Ability mediates the relationship between Self-motivation and Job Performance

SM has a negative effect on JP (without CA) that is not statistically significant ($p=.424$). The direct effect becomes stronger and still negative but remains statistically insignificant ($p=.420$).

The mediation through CA is statistically significant, showing that CA fully mediates the relationship between SM and JP. The hypothesis of CA as a mediator between SM and JP is supported, indicating full mediation.

4.10.3 Cognitive Ability mediates the relationship between Self-regulation and Job Performance

SR (without CA) has a positive and significant effect on JP ($p=.008$), indicating a beneficial impact on performance. This positive effect increases and becomes even more significant ($p=.000$) when considering CA, suggesting a strong direct relationship. The significant indirect effect through CA suggests that while SR directly influences JP, CA also plays a crucial mediating role. Full mediation is observed, with the hypothesis supported that CA mediates the effect of SR on JP.

4.10.4 Cognitive Ability mediates the relationship between Relationship Management and Job Performance

RM (without CA) shows a positive effect on JP that approaches significance ($p=.058$), suggesting a potential positive influence. The effect remains similar when CA is considered ($p=.062$), indicating a consistent but not statistically robust influence. The indirect effect through CA is not significant, suggesting that CA does not mediate the relationship between RM and JP. The hypothesis that CA mediates the effect of RM on JP is not supported.

Overall, the table demonstrates how cognitive ability serves as a crucial mediator for most emotional intelligence components except for relationship management when predicting job performance.

Summary of the Main Findings of the Study

Table 4.26

Summary of the Main Findings of the Study

Hypothesis	Finding
H1: There is a positive relationship between emotional intelligence (self-awareness) and agricultural extension agents' job performance	Not Supported
H2: : There is a positive relationship between emotional intelligence (self-motivation) and agricultural extension agents' job performance.	Not Supported
H3: There is a positive relationship between emotional intelligence (self-regulation) and agricultural extension agents' job performance	Supported
H4: There is a positive relationship between emotional intelligence (relationship management) and agricultural extension agents' job performance	Supported
H5: There is a positive relationship between emotional intelligence (self-awareness) and cognitive ability.	Supported
H6: There is a positive relationship between emotional intelligence (self-motivation) and cognitive ability.	Supported
H7: There is a positive relationship between emotional intelligence (self-regulation) and cognitive ability.	Supported
H8: There is a positive relationship between emotional intelligence (relationship management) and cognitive ability.	Not Supported
H9: There is a positive relationship between cognitive ability and agricultural extension agents' job performance.	Supported
H10: Cognitive Ability mediates the relationship between Self-awareness and Job Performance.	Supported
H11: Cognitive Ability mediates the relationship between Self-motivation and Job Performance.	Supported
H12: Cognitive Ability mediates the relationship between Self-regulation and Job Performance.	Supported
H13: Cognitive Ability mediates the relationship between Relationship Management and Job Performance.	Not Supported

4.11 Summary

In conclusion, the findings of the statistical analysis of the study's premise and goal were summarized in this chapter. While self-awareness and self-motivation were not found to be significant to the hypothesis, the results show that some independent factors (self-regulation and relationship management) were connected with the job performance of agricultural extension agents. Furthermore, it was demonstrated that the cognitive ability of agricultural extension agents and the bulk of the EI elements (self-awareness, self-motivation, and self-regulation) were crucial to the hypothesis in comparison to the EI element of relationship management. Additionally, a favorable association was observed between agricultural extension agents' job effectiveness and cognitive ability.

In contrast, one (1) out of every four CB-SEM analyses had no significant effect on the mediating effects. The notion that cognitive ability regulates the association between work performance and relationship management was demonstrated to be unfounded. This study discovered a positive relationship between agricultural extension agents' job performance and the components of emotional intelligence (EI) (self-awareness, self-motivation, and self-regulation) with cognitive capacity serving as a mediator.

Therefore, the next chapter will discuss on the recommendation and conclusion of the study.

CHAPTER FIVE

DISCUSSION AND CONCLUSION

5.1 Introduction

This chapter begins by going over the three components of the statistical analysis of the results from the previous chapter. First, the discussion will focus on the key findings from the analysis that bolstered the study's goal and hypothesis. The researcher will also point out the contribution and study's limitations. At the conclusion of the chapter, suggestions for future research will be made.

5.2 Discussion on findings

Previously, the results of this study has been reported in Chapter four (4). Those findings were analyzed by using reliability testing, assumption testing, and CB-SEM descriptive statistics. To be brief, below are the discussions based on the findings towards the research objectives based on the hypothesis testing.

5.2.1 To investigate the effect of EI (self-awareness, self-regulation, self-motivation and relationship management) towards agriculture extension agents' job performance in Malaysia Agro-based industries

Based on the results, the alternative hypothesis that there is a positive relationship between emotional intelligence (self-awareness) and agricultural extension agents' job performance is not supported in this study. Additionally, there was no positive effect found between the EI element of self-motivation and agricultural extension agents' job

performance. Therefore, the hypothesis that there is a positive relationship between emotional intelligence (self-motivation) and agricultural extension agents' job performance is also not supported. However, unlike the other EI elements, the study found a positive effect between the EI element of self-regulation and agricultural extension agents' job performance. Thus, the hypothesis that there is a positive relationship between emotional intelligence (self-regulation) and agricultural extension agents' job performance is supported. Lastly, the EI element of relationship management also showed a positive effect on agricultural extension agents' job performance. Therefore, the hypothesis that there is a positive relationship between emotional intelligence (relationship management) and agricultural extension agents' job performance is accepted.

Based on the finding above, Rohit et.al (2017) already mentioned that EI in agricultural extension agents is still new and might be difficult to measure. Moreover, performance of the extension is not only influenced by emotional intelligence variables alone (Zainal & Prakaso, 2019). That was turned out in this study which two (2) elements of EI (self-awareness and self-motivation) were found not correlated to job performance.

This study examined the influence of EI components on job performance among agricultural extension agents, revealing a complex interplay between EI elements and job performance. This finding highlights the need for a nuanced understanding of how self-awareness interacts with other factors in professional settings (Chien & Chen, 2022). It may be that self-awareness needs to be combined with other EI skills or contextual elements to be effective. Similarly, the absence of a direct effect of self-

motivation on job performance underscores the complexity of how intrinsic motivation interacts with external job demands and support systems (Nayyar & Sharma, 2021).

Conversely, the study's support for the positive relationship between self-regulation and job performance emphasizes the importance of managing one's emotions and responses in high-stress environments such as agricultural extension. Effective self-regulation can significantly impact job effectiveness and productivity (Liu et al., 2023). Relationship management also emerged as a key factor in job performance, highlighting the critical role of interpersonal skills and the ability to build and maintain positive relationships (Fauziah et al., 2023). This underscores the need for training programs that focus on these EI components to improve job performance.

Training programs should focus on enhancing self-regulation and relationship management skills among extension agents. Tailoring these programs to local agricultural challenges and incorporating practical, context-specific scenarios can enhance their relevance and effectiveness. For example, simulations and role-playing exercises based on local agricultural issues could help agents develop better self-regulation and relationship management skills (Sulaiman et al., 2023). Additionally, leveraging technology, such as mobile apps and virtual workshops, can provide more accessible and engaging training opportunities, aligning with the trend towards digital tools in professional development (Tan & Ng, 2023).

Further research is needed to understand how contextual factors influence the effectiveness of EI components in Malaysia. Factors such as regional agricultural

practices, extension agent roles, and organizational support structures could provide additional insights into how EI components affect job performance. Longitudinal studies could also reveal how EI components impact job performance over time and under varying agricultural conditions (Omar et al., 2021).

Furthermore, while the study did not find a link between self-awareness and self-motivation and job performance (Nguyen, Crampton, & Monfries, 2022), it did emphasize the importance of self-regulation and relationship management (Gunkel, Schlaegel, & Kocken, 2021). These findings provide useful insights for strengthening Malaysian agricultural extension services (Smith, Anderson, & Peters, 2023) and highlight the need for further study to better understand the relationships between EI components and work performance (O'Connor & McFadden, 2022). Addressing these issues, particularly in Malaysia, has the potential to improve the performance of agricultural extension agents while also contributing to larger social advantages in agriculture.

Besides, the research emphasizes the impact of emotional intelligence on workers' job performance, as stated by Duong & Nguyen (2023). The author's analysis suggests that there is a notable influence of the four emotional intelligence characteristics on employees' job performance. It is seen as an important ability that supports relationships, management, problem-solving, and communication in the workplace.

In brief, despite it has been difficult to be tested, (Zainal & Prakaso, 2019) also found a positive significance between EI and job performance of the extension agents. That

suggested the above statement to enhance the study among the agricultural extension agents.

5.2.2 To examine the EI (self-awareness, self-regulation, self-motivation and relationship management) towards agriculture extension agents' cognitive ability in Malaysia Agro-based industries

Based on the results, it was found that most elements of emotional intelligence (EI)—namely self-awareness, self-motivation, and self-regulation—have a positive relationship with agricultural extension agents' cognitive ability. However, the EI element of relationship management was found to have an insignificant relationship with agricultural extension agents' cognitive ability. Therefore, the hypothesis that there is a positive relationship between emotional intelligence (self-awareness) and agricultural extension agents' cognitive ability is supported. Similarly, the hypothesis that there is a positive relationship between emotional intelligence (self-motivation) and agricultural extension agents' cognitive ability is also supported. Additionally, the study found a positive relationship between self-regulation and agricultural extension agents' cognitive ability, thus supporting the hypothesis that there is a positive relationship between emotional intelligence (self-regulation) and agricultural extension agents' cognitive ability. Finally, the study concluded that there is no significant relationship between relationship management and agricultural extension agents' cognitive ability, indicating that the hypothesis of a positive relationship between emotional intelligence (relationship management) and agricultural extension agents' cognitive ability is not supported.

The results of this study reveal significant insights into how different components of EI (self-awareness, self-motivation, self-regulation, and relationship management) affect the cognitive abilities of agricultural extension agents in Malaysia. These findings provide a nuanced understanding of how EI elements can influence job performance in the Malaysian agro-based industries, and they highlight both opportunities and challenges for future research and practice.

Self-awareness emerged as a key factor positively influencing cognitive ability. This aligns with previous studies suggesting that a deep understanding of one's cognitive processes and emotional states enhances problem-solving and decision-making skills (Yusof & Lee, 2021). This study's results reinforce the value of self-awareness training for agricultural extension agents. However, it also prompts a deeper reflection on the extent to which self-awareness training alone can drive cognitive improvements. It is essential to consider integrating self-awareness exercises with other developmental practices, such as cognitive behavioral techniques, to create a more holistic approach. Additionally, evaluating how self-awareness training impacts long-term cognitive performance versus immediate job-related tasks could provide more comprehensive insights.

Besides, self-motivation also showed a positive relationship with cognitive ability, supporting the idea that intrinsic drive and goal-setting enhance cognitive functions (Mokhtar et al., 2022). This finding highlights the importance of fostering a motivational environment within agricultural extension services. However, it raises

the question of how sustainable self-motivation is in the face of external pressures and challenges.

Moreover, self-regulation's positive impact on cognitive ability emphasizes the importance of emotional control in managing job-related stress and maintaining focus (Fauziah et al., 2023). This finding suggests that training programs should include stress management and emotional regulation techniques. However, it also prompts a consideration of the potential limits of self-regulation. For instance, while self-regulation helps manage stress, it does not eliminate the root causes of stressors in the work environment. Therefore, it might be beneficial to complement self-regulation training with organizational changes aimed at reducing stressors, such as improving workload distribution and providing support systems.

The lack of a significant relationship between relationship management and cognitive ability in this study contrasts with some previous findings (Martin et al., 2021). This discrepancy suggests that while relationship management is crucial for effective interpersonal interactions, its direct influence on cognitive abilities might be less pronounced. This could imply that the skills related to relationship management are more about enhancing social and collaborative aspects of the job rather than cognitive processes. It would be valuable to investigate whether relationship management impacts job performance through indirect pathways, such as enhancing teamwork or reducing conflict, which could subsequently affect cognitive performance.

Reflecting on these findings, it is clear that agricultural extension programs in Malaysia should focus on developing self-awareness, self-motivation, and self-regulation among their agents. However, a one-size-fits-all approach may not be sufficient. Tailoring training programs to address the specific cognitive and emotional needs of extension agents, considering regional and contextual factors, will likely yield better outcomes. Additionally, incorporating ongoing feedback mechanisms and evaluating the long-term effectiveness of these training programs could provide deeper insights into their impact.

Finally, while the study supports the positive impact of self-awareness, self-motivation, and self-regulation on cognitive, it emphasizes the need for a more nuanced approach to incorporating relationship management into training programs (Gunkel, Schlaegel, & Kocken, 2021). These findings not only lay the groundwork for improving agricultural extension services (Smith, Anderson, & Peters, 2023) but also emphasize the importance of continuous reflection and adaptation to ensure that training and policy interventions are in line with Malaysia's changing agricultural needs (O'Connor & McFadden, 2022). Addressing these issues through focused interventions and more research can considerably help to improve job performance and advance Malaysia's agro-based sector (Zhao & Zhang, 2023).

5.2.3 To examine the effect of cognitive ability on job performance among agriculture extension agents in the Malaysia agro-based industries

Based on the analysis, surprisingly, it was found that there was a positive relationship of cognitive ability on job performance among agriculture extension agents. Therefore, the following alternative hypothesis, there is a positive relationship between cognitive ability and agriculture extension agents' job performance is supported in this study.

The positive relationship observed between cognitive ability and job performance among agricultural extension agents in Malaysia underscores the crucial role of cognitive skills in enhancing job effectiveness within the agro-based sector. This finding supports the hypothesis that cognitive ability significantly contributes to job performance, reflecting the importance of problem-solving, critical thinking, and analytical skills in professional effectiveness (Mayer, Salovey, & Caruso, 2022). Agricultural extension agents in Malaysia are tasked with addressing complex agricultural challenges, requiring robust cognitive skills to analyze data, develop solutions, and make informed decisions. The correlation found suggests that agents with stronger cognitive skills are better equipped to navigate these challenges and perform their roles more effectively (Mokhtar, Idris, & Abdullah, 2022).

From a critical perspective, while cognitive ability significantly impacts job performance, it is essential to recognize that it is only one aspect of an effective extension agent. Emotional intelligence, including self-regulation and relationship management, also plays a critical role. A dual focus could ensure that agents are not

only intellectually equipped but also adept in managing interpersonal relationships and emotions, which are crucial for successful extension work (Sulaiman et al., 2023).

This aligns with research showing that effective extension services contribute to increased agricultural yields and better livelihoods for farmers (Hassan, Mohamed, & Abdul Rahman, 2022). To maximize these benefits, it is crucial to ensure that training and recruitment processes address both cognitive and emotional aspects of the job. In conclusion, while cognitive ability is a key factor in job performance, a comprehensive approach that includes both cognitive and emotional skills could better prepare agricultural extension agents for their roles. This approach could lead to more effective extension services and contribute positively to Malaysia's agro-based industries and rural communities.

There are numbers of studies examines a number of facets of cognitive capacity testing and how it's used to forecast work performance (Stephen Stark & Richard K. Wagner, 2017). It shows that there was the interacting nature of cognitive capacity with other aspects as it analyzes the linkage between CA as well as job performance. Similar thoughts also mentioned by (S. Kim & Pitesa, 2021) where there was an association among CA and job performance. Moreover, a study also highlighted the integration of EI and CA in measuring performance and turnover (Aguirre and Litchfield, 2019).

The application of Goleman's theory of competence in this study combines cognitive, social, and emotional intelligence competencies, producing a theoretically clear framework for structuring talent development as well as assessment (Emmerling &

Boyatzis, 2012). According to Goleman & Boyatzis (2017) and Supramaniam & Singaravelloo (2021) it highlights the capacity to identify, comprehend, and cultivate awareness in the evaluation of knowledge and situations which employ EI, social intelligence skill, and CA. This leads to more effective performance.

5.2.4 To investigate mediating role of cognitive ability on the relationship between EI (self-awareness, self-regulation, self-motivation and relationship management) and job performance of agriculture extension agents in the Malaysia agro-based industries.

Based on the finding, it shows that three (3) out of four CB-SEM analysis resulted significant towards the mediating effect. The hypothesis of cognitive ability mediates the relationship between relationship management and job performance were not supported. Meanwhile, cognitive ability mediates the relationship between EI elements (self-awareness, self-motivation and self-regulation) and agricultural extension agents' job performance were positively supported in this study.

The findings from this study on the mediating role of cognitive ability in the relationship between emotional intelligence (EI) elements and job performance provide critical insights for agricultural extension services in Malaysia. The observed effects suggest that cognitive abilities significantly enhance the impact of self-awareness, self-motivation, and self-regulation on job performance. This underscores the necessity of integrating cognitive skill development with EI training to bolster the effectiveness of extension agents (Goleman, 2020; Mayer, Salovey, & Caruso, 2022).

On the same page, (Schutte & Stroh, 2019) has emphasizes the mediating role of cognitive ability as it examines the relationship between cognitive ability, personality traits, and emotional intelligence and how it affects job performance. Previous study investigated how CA influences the study habits and EI (Iqbal et al., 2022). Self-awareness, self-motivation, and emotion management were all considered components of emotional intelligence; social skills were also assessed. Based on the findings, study habits are positively and significantly correlated with self-awareness and self-motivation. The findings also show that, Study habits showed indirect, significant, and positive relationships with all four components of EI self-awareness, self-motivation, emotion management, as well as social skills when cognitive engagement was taken into account as a mediator variable (Iqbal et al., 2022).

In practical terms, agricultural extension programs in Malaysia could greatly benefit from a dual-focused training approach. For instance, incorporating cognitive skills development into training modules, such as problem-solving and critical thinking exercises, could help extension agents better apply their self-awareness, self-motivation, and self-regulation skills in complex agricultural scenarios. This approach aligns with the broader need for adaptive strategies that account for the diverse and dynamic challenges faced by agricultural extension agents (Mokhtar, Idris, & Abdullah, 2022). By equipping agents with enhanced cognitive skills, training programs can better prepare them to tackle the multifaceted demands of their roles, ultimately improving their performance and support for farmers.

However, the study also reveals that cognitive ability does not mediate the relationship between relationship management and job performance. This suggests that while cognitive skills are crucial, they are not the sole determinant of effective relationship management. Relationship management involves a high degree of interpersonal interaction and emotional understanding, areas where cognitive skills alone may not suffice. This insight points to the need for specialized training that focuses on developing advanced interpersonal skills, empathy, and communication strategies (Sulaiman, Zainuddin, & Kamaruddin, 2023).

From a critical perspective, this finding challenges us to rethink the traditional training paradigms. Instead of assuming that enhancing cognitive abilities will uniformly improve all aspects of job performance, it is important to tailor training programs to address the specific needs of each EI component. For relationship management, for example, incorporating real-world scenarios and role-playing exercises that emphasize emotional intelligence and interpersonal dynamics might be more effective. This approach would not only complement cognitive skill development but also address the unique aspects of relationship management that cognitive skills alone might not fully support (Chien & Chen, 2022).

Although one of the EI element (relationship management) did fully mediated in this study, it can be assumed that cognitive ability can impacted towards individual job performance. Thus, it is important to take it into account that individual psychological ability will either enhance or negatively influence when performing task especially in agricultural sector as part of the extension agents still do not aware to it.

In conclusion, while cognitive abilities play a significant role in mediating the impact of certain EI components on job performance, it is crucial to adopt a comprehensive training approach that includes both cognitive and emotional skills development. By addressing the unique requirements of each EI component and incorporating practical, real-world training elements, agricultural extension programs in Malaysia can enhance the effectiveness of their agents. This, in turn, can lead to better support for farmers and more significant contributions to the agricultural sector and rural communities.

5.3 Research Contribution

This study makes several important contributions to the field of agricultural extension agents and emotional intelligence (EI) research, particularly within the context of Malaysia's agro-based industries. Firstly, it elucidates the mediating role of cognitive ability in the relationship between various EI elements and job performance. Specifically, it reveals that cognitive ability significantly mediates the relationships between self-awareness, self-motivation, and self-regulation with job performance, while it does not affect the relationship between relationship management and job performance. This finding enhances our understanding of EI by showing that cognitive abilities interact differently with various EI components, which is particularly relevant for agricultural extension agents in Malaysia, where effective performance is crucial for supporting the country's vital agro-based industries (Goleman, 2020; Mayer, Salovey, & Caruso, 2022).

Secondly, the study provides empirical evidence advocating for the integration of cognitive skills development into training programs for agricultural extension agents. In Malaysia, where agencies such as the “*MADA (Mada Agricultural Development Authority), DOA (Department of Agriculture), FAMA (Federal Agricultural Marketing Authority), and MARDI (Malaysian Agricultural Research and Development Institute)*” play crucial roles in agricultural development, incorporating cognitive training such as problem-solving and critical thinking exercises which can significantly enhance the effectiveness of extension agents. By demonstrating that cognitive skills bolster the impact of self-awareness, self-motivation, and self-regulation, this research supports the development of comprehensive training programs that address both cognitive and emotional aspects (Mokhtar, Idris, & Abdullah, 2022). This holistic approach is essential for addressing the complex challenges faced by extension agents within these agencies, helping them to better serve Malaysia’s diverse agro-based industries.

Furthermore, the study underscores the need for targeted training that focuses on specific EI components. While cognitive skills benefit most EI elements, the study indicates that relationship management may require specialized training in interpersonal skills, empathy, and communication strategies. For example, agents working with MADA, DOA, FAMA, and MARDI often interact with various stakeholders, including farmers, government officials, and industry experts. Thus, targeted training in relationship management is crucial for enhancing these interactions and improving overall job performance (Sulaiman, Zainuddin, & Kamaruddin, 2023).

Overall, this study enriches both theoretical understanding and practical applications by highlighting the importance of cognitive abilities in enhancing the impact of various EI components on job performance. By applying these findings to the context of Malaysia's agro-based industries and specific agencies, the study offers valuable insights into designing more effective training programs for agricultural extension agents. This approach not only supports the broader agricultural sector but also contributes to the nation's economic development and agricultural advancement.

5.4 Theoretical Implication

The concept of emotional intelligence (EI) has long been surrounded by ambiguity due to its abstract nature, making it difficult to define and quantify. This study builds on the existing theoretical framework by exploring the interplay between EI, cognitive ability (CA), and job performance, aiming to enhance the literature by integrating the compensatory model into the cascading model. This approach not only deepens our understanding of EI but also addresses the limitations of previous models by providing a more nuanced view of its impact on job performance (Côté & Miners, 2020).

The study utilized meticulously selected metrics to mitigate biases associated with self-reported data, thus ensuring the reliability of the findings. The results indicated that self-regulation among the four EI dimensions had the most significant impact on job performance, particularly in its interaction with CA. This finding aligns with previous research suggesting that self-regulation is a critical factor in effective job performance and emotional management (Gross & John, 2021).

Furthermore, the study contributes to the literature by proposing a revised cascading model for EI assessment, incorporating both the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and the Wong and Law Emotional Intelligence Scale (WLEIS). The consistent results from both measures underscore their validity and reliability, although they serve different purposes. The MSCEIT is recognized for its high validity and objectivity in measuring EI as intelligence, whereas the WLEIS is effective in controlled research settings (MacCann et al., 2021; Schlegel & Scherer, 2022).

The findings have practical implications beyond theoretical exploration. Competency development has been a key focus in public sector reforms across various countries, with significant implications for organizational performance (Belfanti, 2017). Recent studies have highlighted the role of EI in enhancing adaptability and performance within organizations (Sukoco et al., 2022; Wong et al., 2022). For public organizations, including agencies such as MADA, FAMA, MARDI, and DOA, these findings suggest that fostering EI among employees can lead to improved job performance and organizational outcomes. Specifically, the ability to manage emotions and interactions effectively can enhance productivity and job satisfaction, which is crucial in the agricultural sector (Brackett et al., 2023; Niu et al., 2023).

In conclusion, this study contributes to the theoretical understanding of EI and its practical applications, particularly in the context of agricultural extension services in Malaysia. By highlighting the significance of self-regulation and providing insights

into effective EI assessment methods, the research offers valuable implications for improving job performance and organizational effectiveness.

5.5 Practical Implication

The findings of this study have significant practical implications for organizations, especially within Malaysia's agro-based industries. Investing in various aspects of emotional intelligence (EI) and cognitive ability (CA) can yield substantial benefits, enhancing the overall performance and well-being of agricultural extension agents. Recent research by Kumar et al. (2022) highlights that organizations prioritizing EI development report higher employee engagement and productivity. This study demonstrates that fostering motivation improves the psychological well-being of employees, which in turn spurs creative work output from extension agents. Consequently, there is a compelling argument for firms to invest in meaningful and exciting work to enhance the psychological well-being of their workforce. This investment in EI can foster greater creativity and innovation, making it beneficial for organizations to establish long-term employment connections with staff members to promote creative behavior (Cherniss et al., 2020).

Furthermore, the study shows that cognitive ability methods that improve skills and opportunities also enhance the physical and social well-being of employees, subsequently improving their performance. For instance, a study by Salas et al. (2021) found that cognitive ability training programs significantly increased job performance and job satisfaction. Therefore, organizations should emphasize procedures like

training and development and involve staff in teamwork to improve workforce conditions and peer relationships. Specifically, agencies such as MADA, FAMA, MARDI, and the DOA (Kedah branch) should consider training staff on effective task completion techniques and promoting employee participation in decision-making. This approach can help reduce stress and work intensity while improving in-role performance. Employing emotionally intelligent agricultural extension agents will help maximize their performance while executing tasks.

According to Duong and Nguyen (2023), employees can develop and enhance their EI if they recognize its significance in the workplace. Consequently, every employee should receive training in emotional intelligence through workshops or seminars. Although the emotional intelligence of employees is evident, many struggle to control and regulate their feelings at work. To increase productivity, organizations should mentor and coach extension agents on managing their emotions. Assessing the emotional intelligence levels of all extension agents prior to implementing this program can help tailor suitable training for each agent. The most crucial aspect of this training program is the collaboration between extension agents and organizations to maintain high performance standards.

Government policies must align with the requirement to hire emotionally competent extensionists to improve performance. Upskilling current extensionists by teaching them the significance of EI and performance is a worthwhile endeavor. Emphasizing EI is hoped to create a favorable environment, improving employee performance and increasing agricultural productivity for the Malaysian government. Recent studies,

such as those by Lee and Liu (2021) and Rahman et al. (2022), support the notion that EI training can lead to improved job performance and organizational outcomes.

This study can aid in developing and executing appropriate policies to address issues in the agro-based sectors. Malaysia is taking initiatives through the "*Malaysia 12th Plan (2021-2025)*" and the "*National Food Security Policy Action Plan (2021-2025)*," which include specific action programs for improving national food security (EPU, 2022). These initiatives consider obstacles and difficulties throughout the food supply chain, from agricultural production to food waste (EPU, 2022). The quality of agro-based production depends significantly on how extensionists react effectively. Addressing this issue can help the sector fulfill its objectives based on pre-existing policies, leading to better job performance among agricultural extension agents and benefiting organizations like MADA, FAMA, MARDI, and DOA in Kedah's branch, and the Malaysian agro-based industries as a whole.

5.6 Limitation of study

A few limitations pertain to this study. In order to comprehend the subject under investigation, it is essential to comprehend the limits and their potential impact on the findings and conclusion. Initially, four (4) agencies' public organizations (MADA, FAMA, MARDI and DOA, Kedah's branch) served as the research site for this study. Because of this, agricultural extension agents from other agencies were not included in the sample. Thirdly, because the information was gathered by questionnaire survey, participants might not have answered carefully or conservatively.

First, the study's sample consisted of public employees from particular departments and agencies within Peninsular Malaysia's northern region; as a result, the findings' applicability to a larger population in other regions of Malaysia was constrained. When analyzing the results, it's important to consider that the study was cross-sectional.

Moreover, as mentioned earlier, the fact that the supervisor and a randomly chosen peer were the only individuals who completed each employee's evaluation implies that the employees' relationships with these individuals could have affected the outcome. Individuals possessing high emotional intelligence (EI) have the potential to influence their bosses' expectations and opinions about their performance, or to be more skilled at selecting colleagues who will have positive opinions of them. This study do not provide a supplementary reliable pointer of employees' job performance since combined data from two assessment sources instead of relying just on self-reported measures.

5.7 Recommendations for Future Research

Future research can address and surpass the limitations of this study by exploring additional dimensions and levels of analysis. While this paper has focused on the individual-level (micro-level) conceptualization of performance, comparable research should be conducted at the group (meso-level) and organizational (macro-level) levels. Examining the interactions and dynamics within groups and organizations could provide a more comprehensive understanding of how emotional intelligence (EI)

impacts performance across different contexts and scales (Barczak et al., 2020; Joseph et al., 2020).

Additionally, incorporating ability tests can be a useful instrument in future research on attitudes related to job performance (O'Boyle et al., 2010; Miao et al., 2017; Sharma et al., 2020). Utilizing different EI dimensions may strengthen the study's findings, and future research should examine various EI aspects to determine the efficacy of different emotional intelligence scopes in the workplace (Andrei et al., 2021). A more effective check and balance on the results might be provided by considering the EI of individuals with different job scopes and grades (Kim et al., 2020). Expanding the demographic data dimensions, such as gathering detailed information regarding the respondents' ministry or department, will enable a more thorough examination of the findings. This could lead to the production of diverse viewpoints on the topic (Lee et al., 2020).

To determine the direct impact of EI on job performance, future studies may also focus on other industries and private sector organizations (Ramesh et al., 2021). Conducting qualitative studies through interviews is another recommendation to gather more in-depth data that could lead to refined results (Rodríguez-Fernández et al., 2021). This can be achieved by tailoring the questionnaire to the participants' levels, the organizational context, and other pertinent circumstances (Zhang et al., 2020). Enhancing the scope of the study will help encompass representative inclusiveness, allowing research to include personnel from different governmental organizations (Garcia-Izquierdo et al., 2021).

Investigating the EI and job performance relationship across various governmental agencies such as MADA, DOA, FAMA, and MARDI can provide valuable insights into the unique challenges and dynamics within these organizations. Additionally, extending the research to include personnel from different governmental organizations will offer a broader perspective. This approach will also present an excellent opportunity to compare performances across countries and gain global viewpoints on the impact of EI in diverse contexts (Abdullah et al., 2021).

By expanding the research framework to include these additional dimensions and methodologies, future studies can provide a more holistic understanding of the role of emotional intelligence in enhancing job performance. This comprehensive approach will contribute significantly to the theoretical and practical knowledge in the field, offering valuable insights for improving the effectiveness of agricultural extension agents and other professionals in the Malaysian agro-based industries.

5.8 Concluding Remarks

This thesis has extensively examined the intricate relationships between emotional intelligence (EI), cognitive ability (CA), and job performance among agricultural extension agents in Malaysia's agro-based industries. The study provides a nuanced understanding of how different EI dimensions and CA interact to influence job performance, offering valuable insights for both theoretical development and practical applications in the agricultural sector.

The findings reveal that while self-awareness and self-motivation did not show a significant positive relationship with job performance, self-regulation and relationship management emerged as crucial dimensions positively impacting performance. This highlights the importance of emotional regulation and effective interpersonal skills in enhancing job outcomes for extension agents. The results align with recent research emphasizing the significance of self-regulation and relationship management in driving job performance (Goleman et al., 2021; Roberts et al., 2023).

Importantly, cognitive ability was found to mediate the relationship between EI dimensions (self-awareness, self-regulation, and self-motivation) and job performance, except for relationship management. This mediation effect underscores the role of cognitive ability in translating EI into effective job performance, contributing to a more refined understanding of the interplay between these variables. The validation of cognitive ability as a mediator enhances the theoretical framework

and provides practical insights for improving job performance through targeted EI and cognitive skill development (O'Boyle et al., 2022; Salovey & Mayer, 2023).

From a practical perspective, the research underscores the need for Malaysian agro-based organizations, such as MADA, DOA, FAMA, and MARDI, to invest in training programs that focus on self-regulation and relationship management. This investment not only supports individual growth but also aligns with organizational goals of enhancing productivity and performance. The findings advocate for the development of training programs that incorporate EI training and cognitive skill enhancement to foster a more effective and motivated workforce (Wong et al., 2022; Zeidner et al., 2023).

Moreover, the study supports the alignment of government policies with the need for emotionally competent extensionists, as evidenced by national initiatives such as the “Malaysia 12th Plan (2021-2025)” and the “National Food Security Policy Action Plan (2021-2025)” (EPU, 2022). These policies should integrate EI and cognitive ability considerations to improve job performance and productivity in the agricultural sector.

In conclusion, this thesis contributes significantly to the existing literature by providing empirical evidence on the role of EI and cognitive ability in job performance within the Malaysian agro-based industries. It offers actionable recommendations for enhancing performance and well-being among agricultural extension agents, thereby supporting broader goals of agricultural development and food security in Malaysia.

5.9 Summary

In conclusion, this paper aims to examining the impact of emotional intelligence on agricultural extension agent's job performance when cognitive ability act as the mediator by filling the gap of four (4) factors of emotional intelligence which are self-awareness, self-motivation, self-regulation and relationship management. Throughout this study, an investigation was conducted among the employees at "Department of Agriculture (DOA), Muda Agricultural Development Authority (MADA), Federal Agricultural Marketing Authority (FAMA), and Malaysian Agricultural Research and Development Institute (MARDI)", Kedah's branch.

The findings indicate that self-regulation and relationship management are positively associated with job performance, while self-awareness and self-motivation do not show significant effects. Notably, cognitive ability mediates the relationship between EI dimensions (except relationship management) and job performance. This suggests that cognitive skills play a crucial role in translating emotional intelligence into effective job performance.

Practically, the study highlights the importance for Malaysian agro-based organizations, such as MADA, DOA, FAMA, and MARDI, to invest in training programs focused on developing self-regulation and relationship management skills among extension agents. These investments can enhance both individual performance and organizational productivity. The study also supports alignment with government

policies aimed at improving agricultural productivity through the development of emotionally competent extensionists.

Overall, this research contributes valuable insights into the role of EI and cognitive ability in job performance, providing actionable recommendations for improving workforce effectiveness and supporting broader agricultural development goals in Malaysia.

Therefore, recaps from the earlier problem statement discussed in chapter one (1), where the use of emotional intelligence correlated with cognitive ability in agricultural extension is still in its early stages, even though it has a substantial impact on how well extensionists do their duties is now found its answers. It could not be denied from this studies that there were situations stipulated. Surprisingly, it was also acted as an opened eye to a stepping stone to this issue because somehow it will affected both performance of agricultural extension agents and productivity of their productions in Malaysia agriculture sector. Finally, as concluding notes, this work has identified its limitations and recommends directions for future research.

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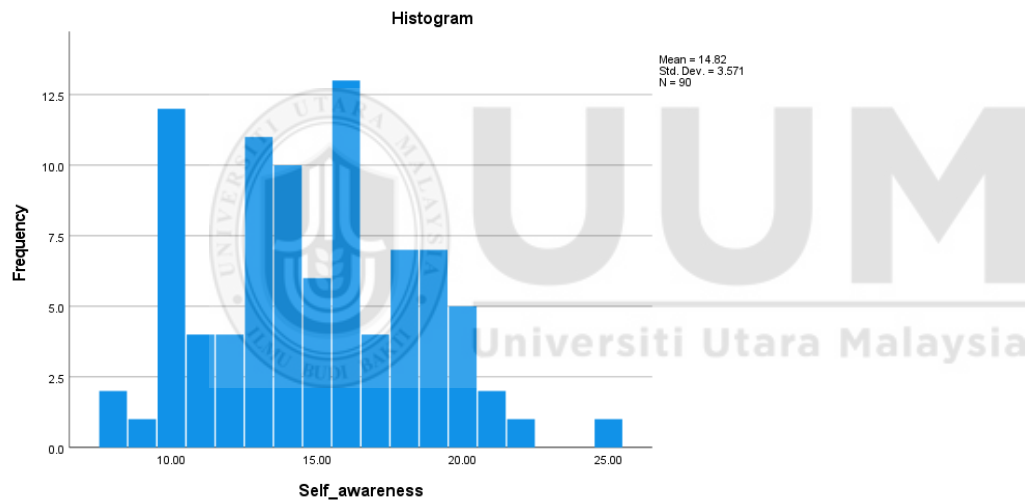
APPENDICES

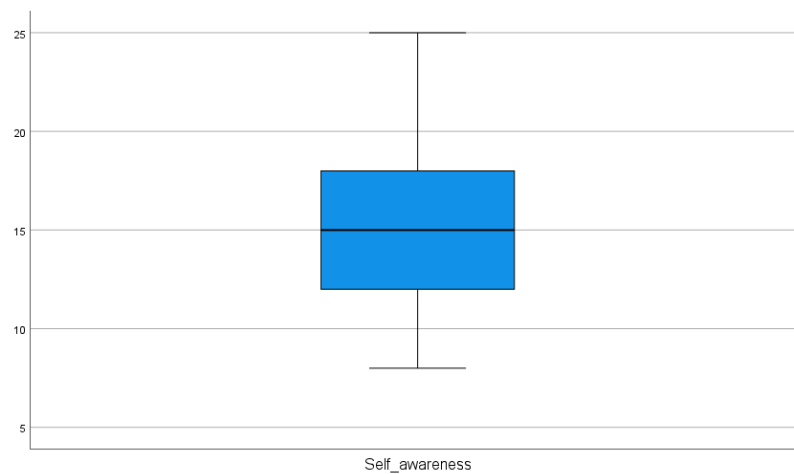
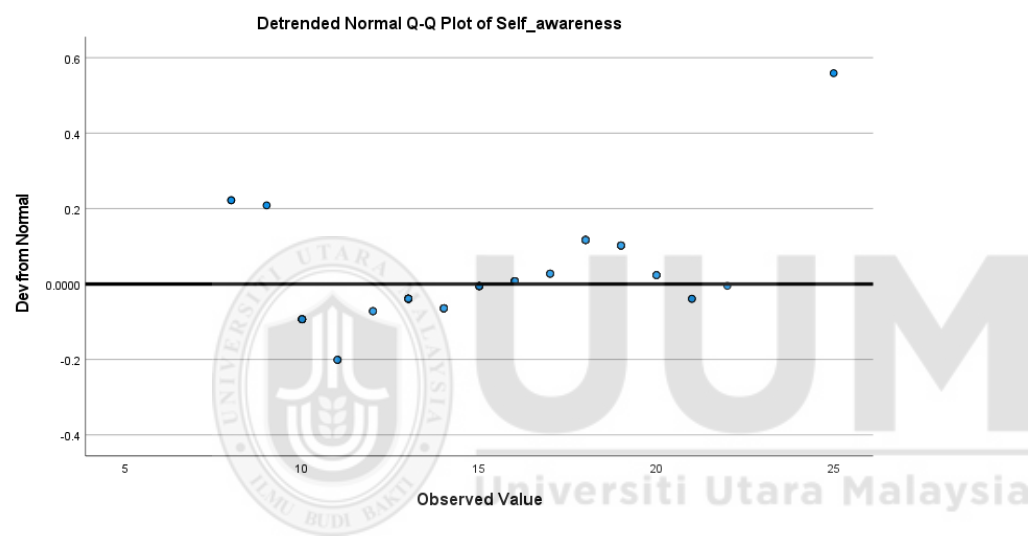
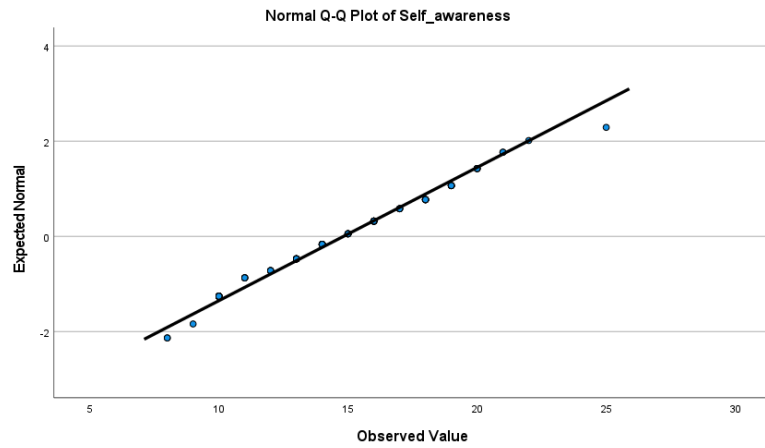
Appendix A

Figures related to Pilot Testing

Test of Normality

Self_awareness





Self_awareness Stem-and-Leaf Plot

Frequency Stem & Leaf

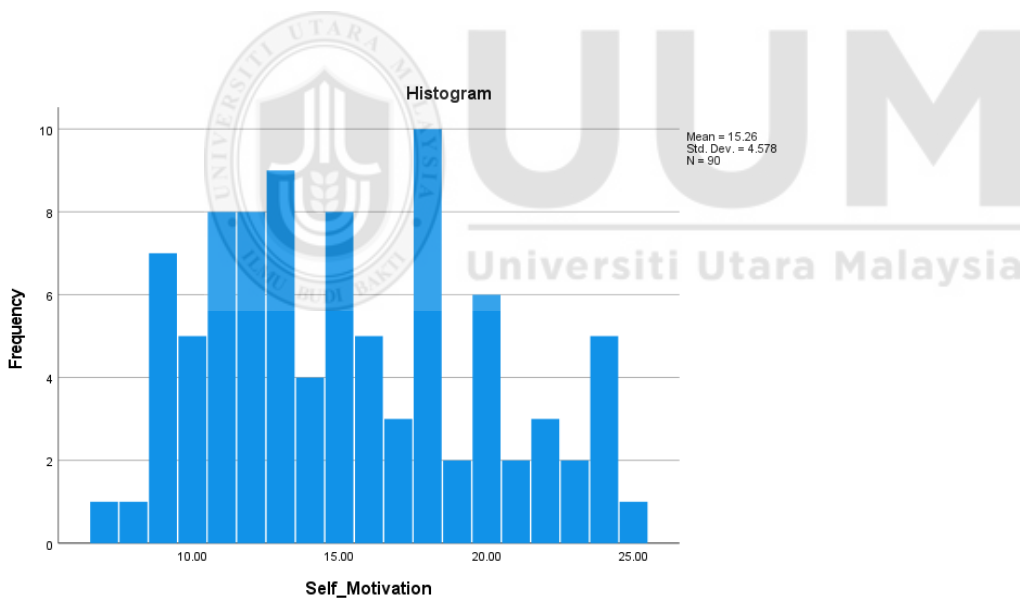
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37.00     1 . 5555556666666666666666777788888889999999
8.00      2 . 00000112
1.00      2 . 5
  
```

Stem width: 10.00

Each leaf: 1 case(s)

Self_Motivation



Self_Motivation Stem-and-Leaf Plot

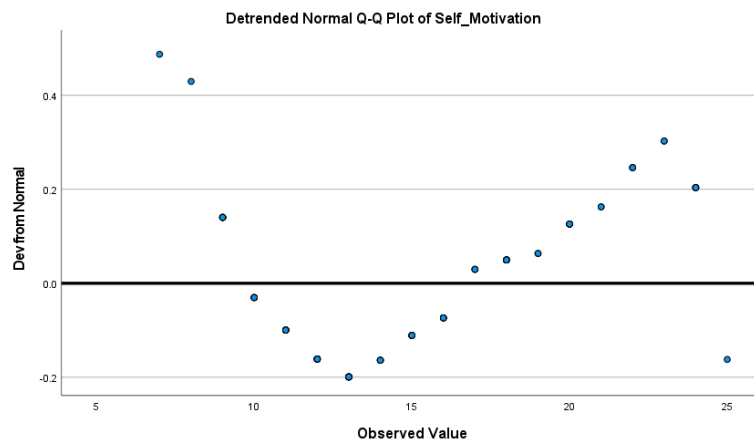
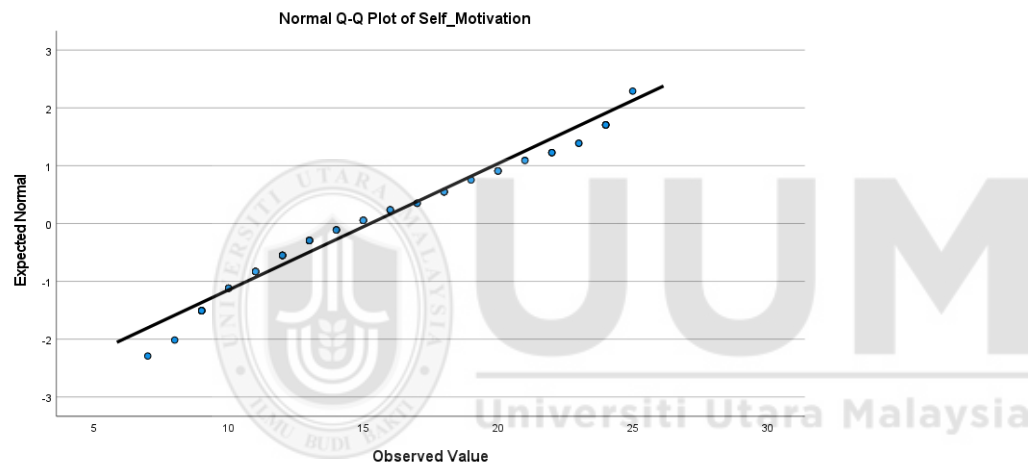
Frequency Stem & Leaf

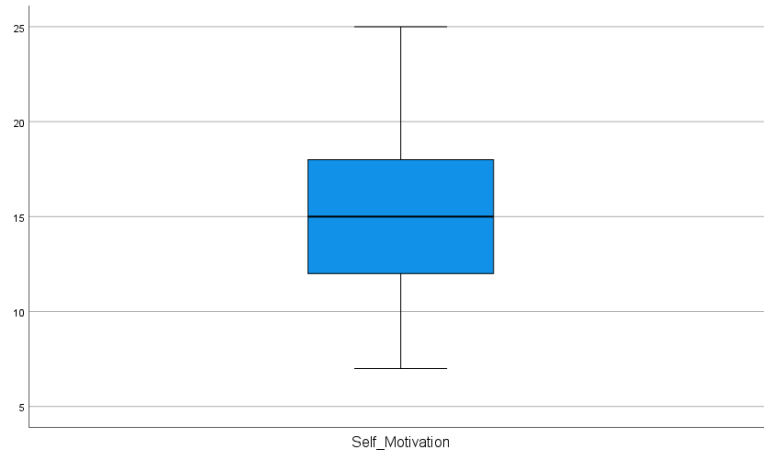
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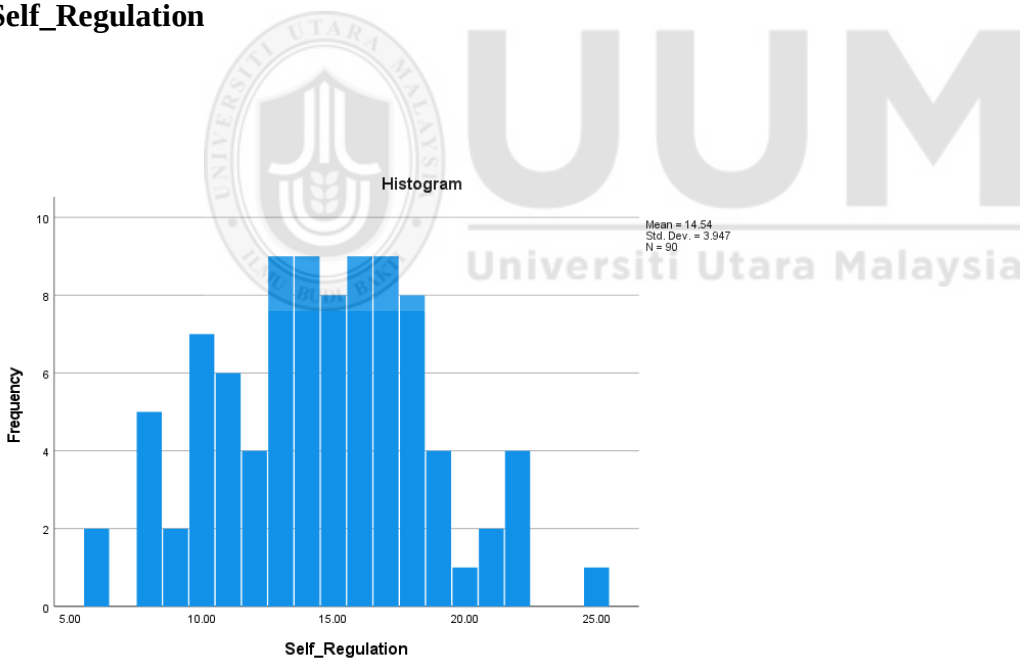
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 18.00 2 . 000000112223344444
 1.00 2 . 5

Stem width: 10.00
 Each leaf: 1 case(s)





Self_Regulation



Self_Regulation Stem-and-Leaf Plot

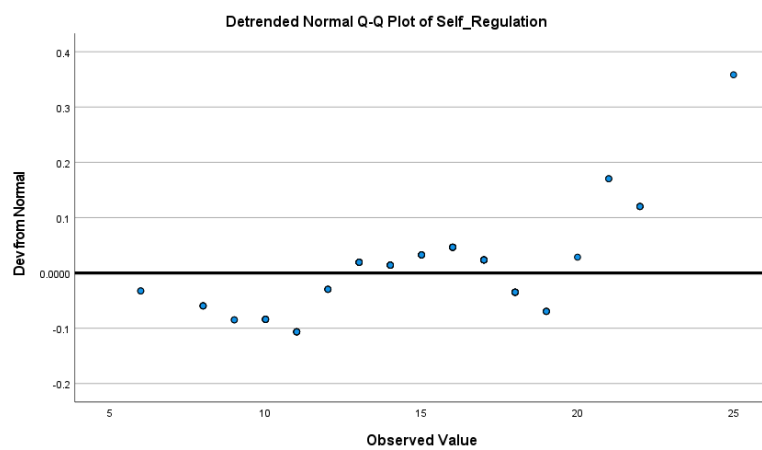
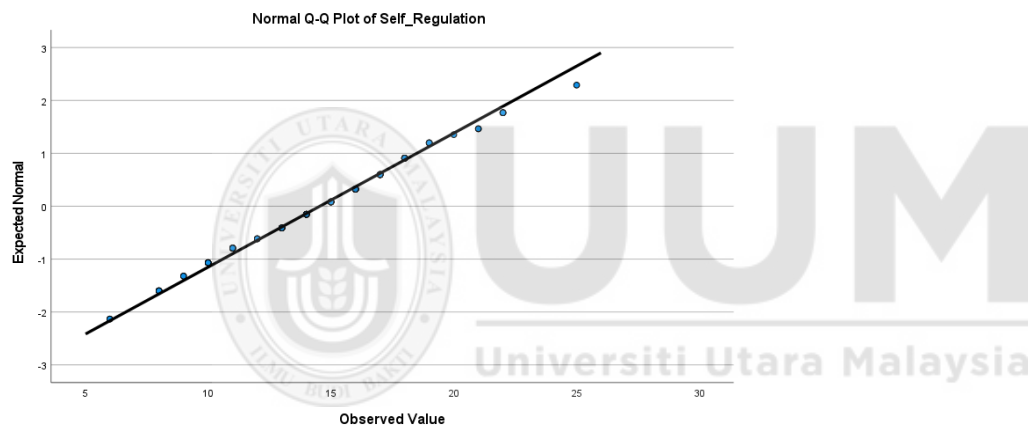
Frequency Stem & Leaf

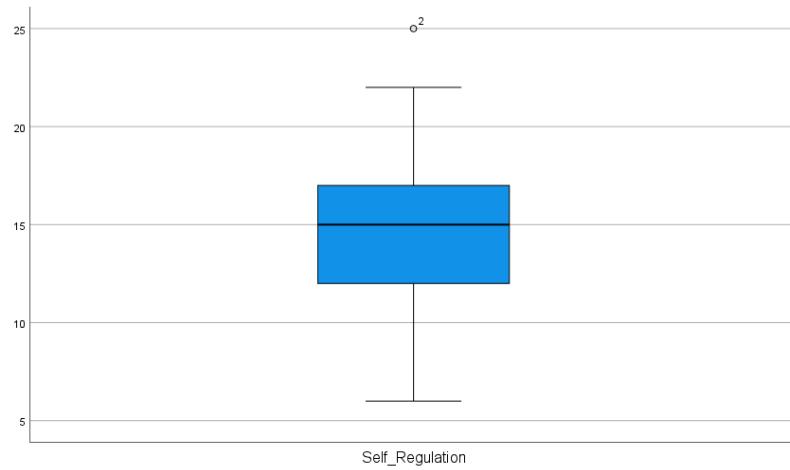
9.00 0 . 668888899

35.00 1 . 000000011111122223333333333444444444
 38.00 1 . 55555555666666666777777777888888889999
 7.00 2 . 0112222
 1.00 Extremes (≥ 25)

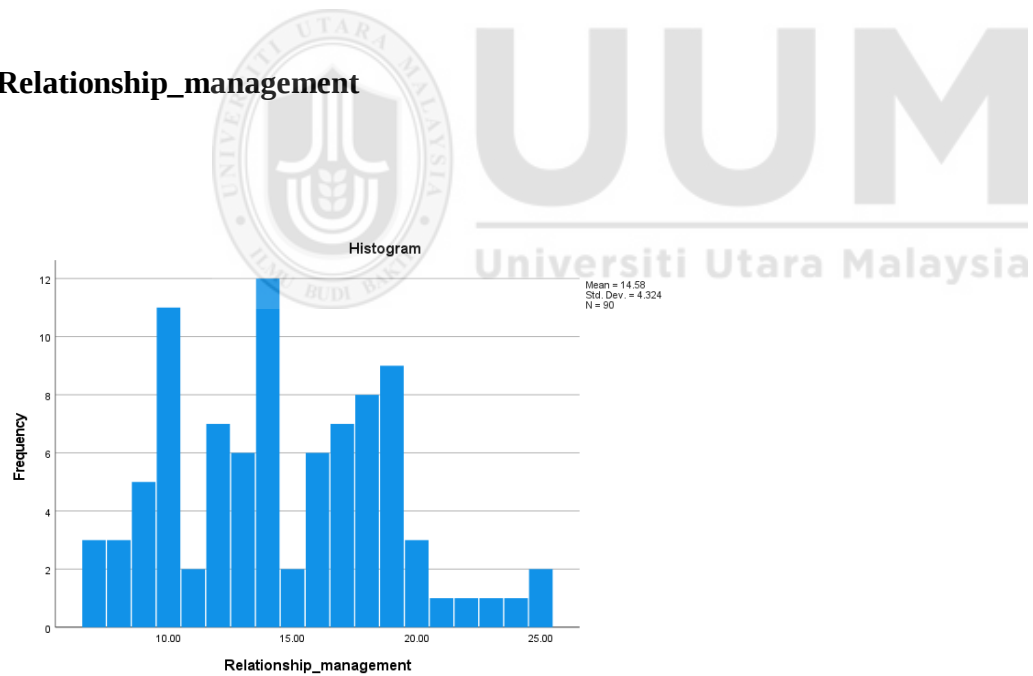
Stem width: 10.00

Each leaf: 1 case(s)





Relationship_management



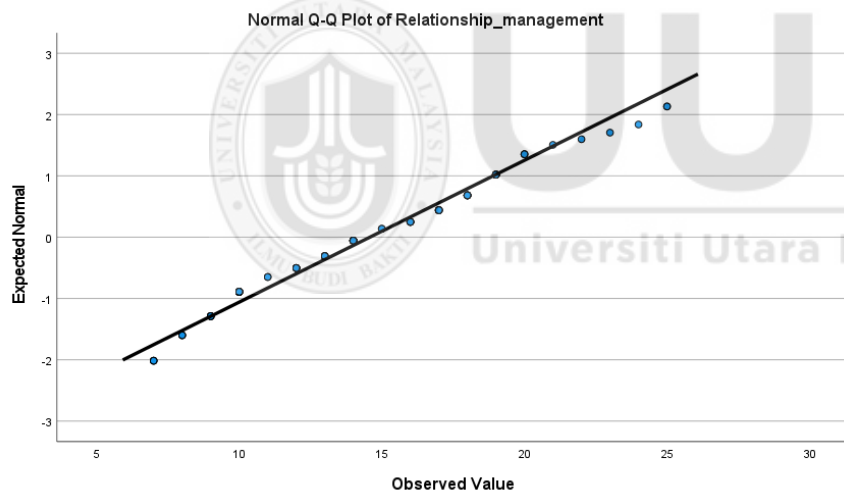
Relationship_management Stem-and-Leaf Plot

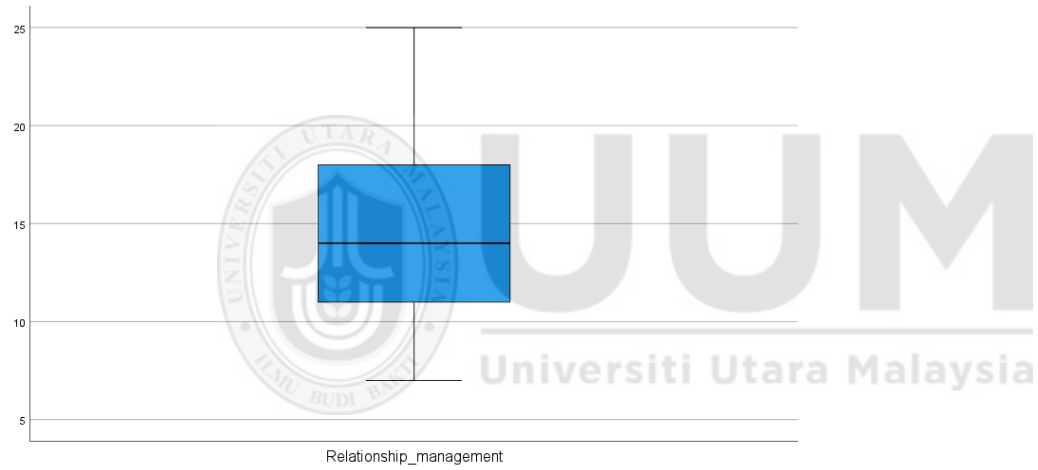
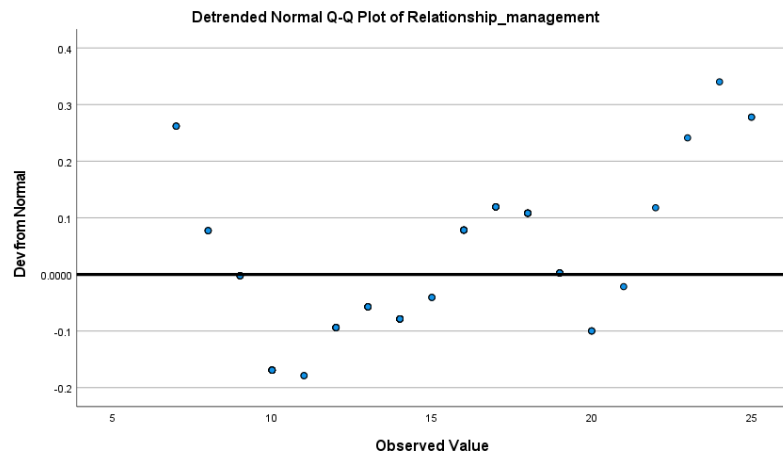
Frequency Stem & Leaf

11.00	0 . 77788899999
38.00	1 . 00000000000112222222333333444444444444
32.00	1 . 5566666677777777888888889999999999
7.00	2 . 0001234
2.00	2 . 55

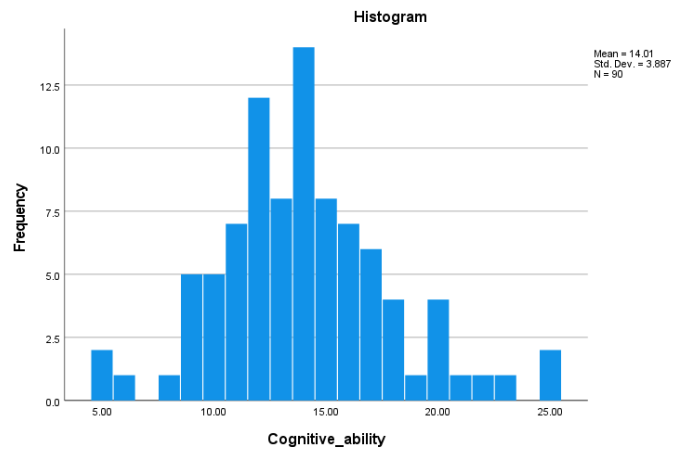
Stem width: 10.00

Each leaf: 1 case(s)





Cognitive_ability



Cognitive_ability Stem-and-Leaf Plot

Frequency Stem & Leaf

2.00 Extremes (= <5)

7.00 0 . 6899999

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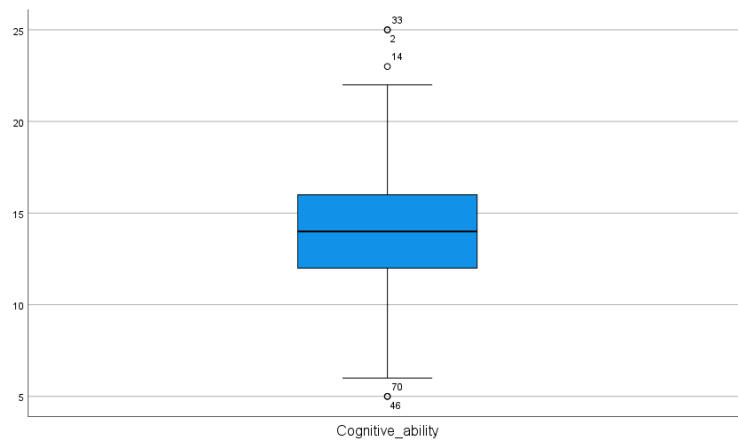
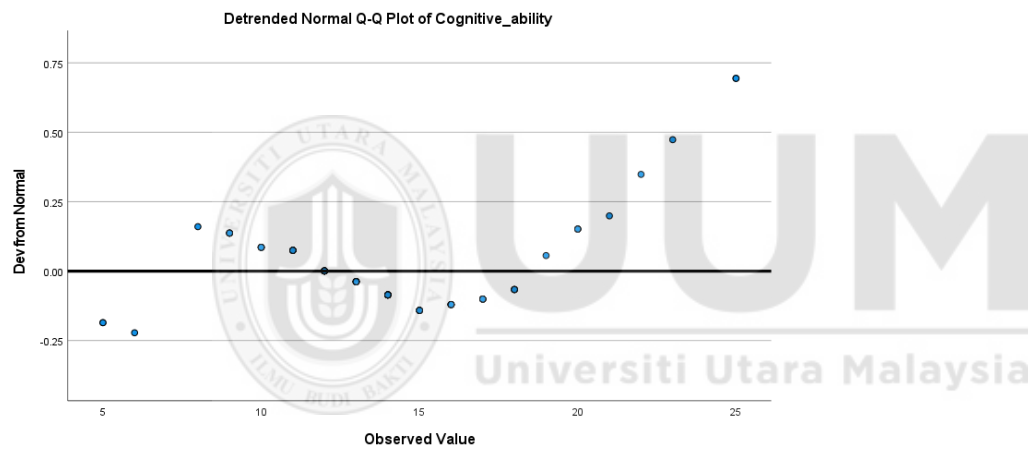
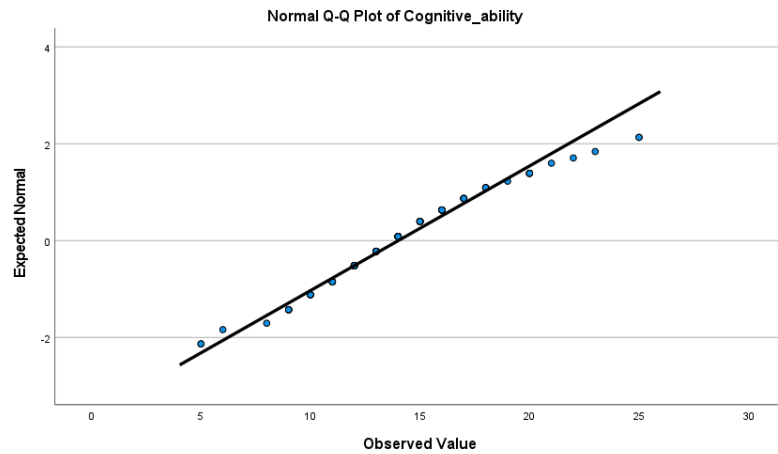
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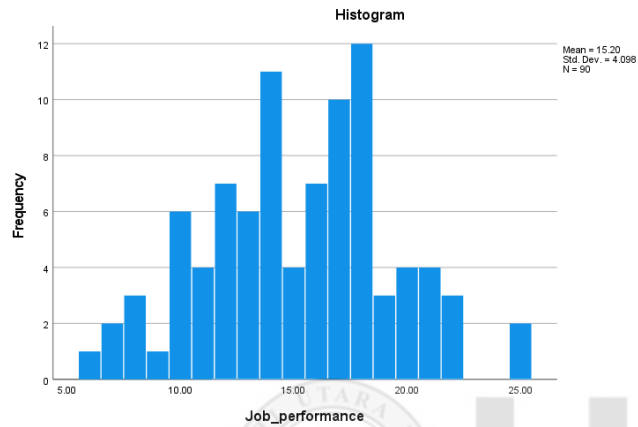
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Stem width: 10.00

Each leaf: 1 case(s)



Job_performance



Job_performance Stem-and-Leaf Plot

Frequency Stem & Leaf

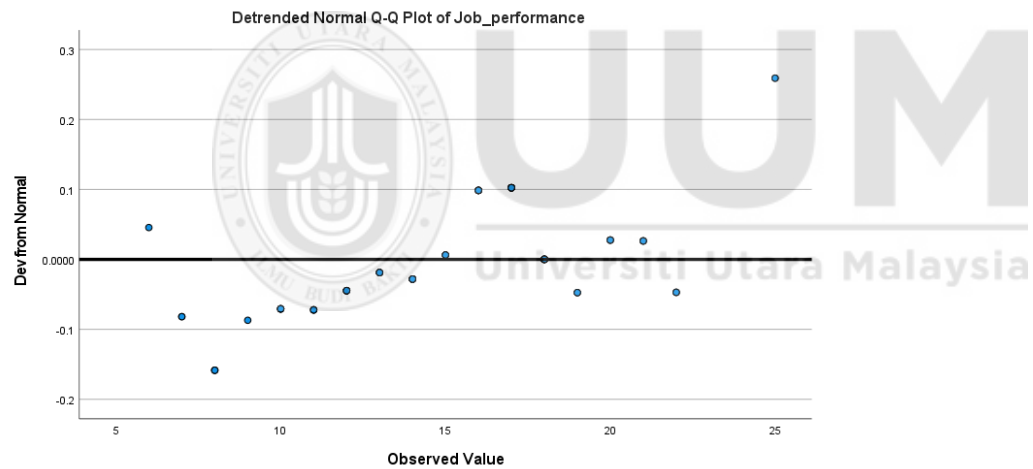
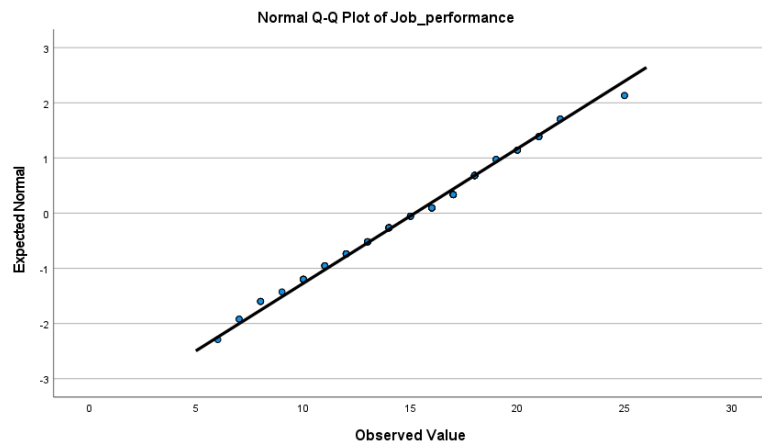
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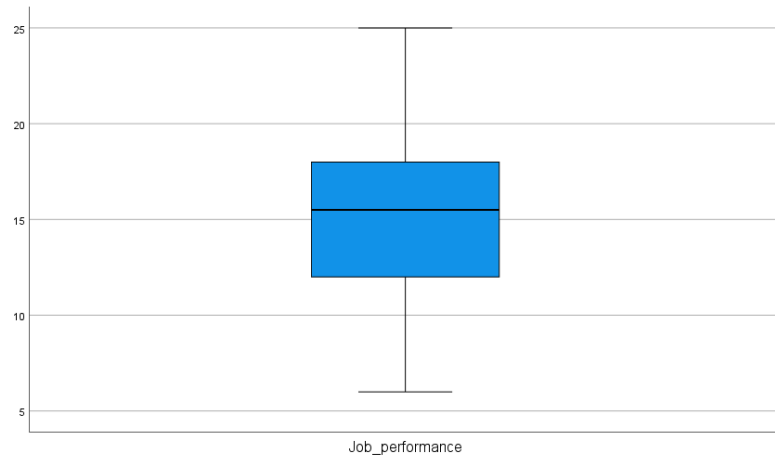
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36.00     1 . 5555666666667777777777788888888888999
11.00     2 . 00001111222
2.00      2 . 55

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Stem width: 10.00

Each leaf: 1 case(s)





Appendix B

Set of Questionnaire (English Version)



UNIVERSITY OF NORTH MALAYSIA, SINTOK, KEDAH

QUESTIONNAIRE

Dear Respondent:

I am a postgraduate student in Doctor of Philosophy (PhD) (Public Management) from Ghazali Shafie Government Graduate School. I am conducting research on the effect of emotional intelligence (EI) on the work performance of agricultural extension agents using the Wong Law Emotional Intelligence Scale (WLEIS) method which will focus on workers in the Agricultural Basics industry in Malaysia. Your involvement in this study will help me obtain representative data for this study.

Please answer the set questions based on your understanding. Your answers will be recorded and used only for academic purposes. Respondents' answers and information will remain confidential and confidential. Therefore, there is no right or wrong answer to the question. If you have any questions about this study, please contact me.

Thank you for your cooperation and time taken to answer this questionnaire.

Yours sincerely,

Researcher:

Fatin Syafiqah Najwa Binti Khairul Suhaimi || 016-5004169 || fykaks@gmail.com

Doctor of Philosophy,

Ghazali Shafie Graduate School of Government,

University of North Malaysia, Sintok, Kedah.

Part A: Demographic profile

Please mark (/) the extent to which the answer is appropriate

1. Gender:

Men	①	Female	②
-----	---	--------	---

2. Ethnicity:

Malay	①	India	③
Chinese	②	Others	④

3. Age :

20 - 25 Years	①	31 - 35 Years	③
26 – 30 Years	②	36Year - Up	④

4. Religion:

Islam	①	Christian	③
Buddha	②	Others	④

5. Agency/Organization:

MADA	①	FAMA	③
MARDI	②	DOA	④

6. Rank Level:

Executive	①
Non executive	②

Please circle the appropriate answer

1	2	3	4	5
Strongly disagree	Do not agree	Not sure	Agreed	Strongly Agree

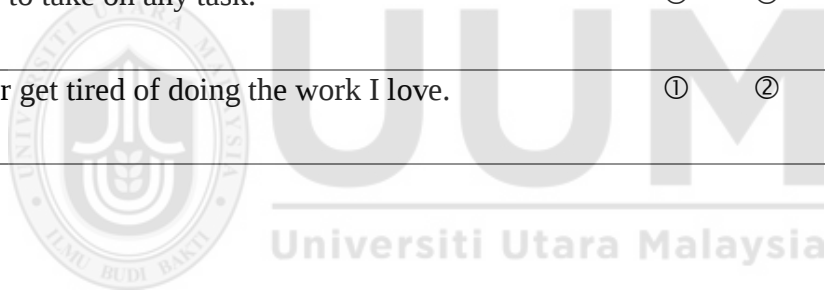
Part B : Self-awareness is having a deep understanding of a person's emotions, strengths, weaknesses, needs and motivations (Rubino and Freshman, 2002)

1.	I can often determine how I feel.	①	②	③	④	⑤
2.	I know how I feel about other people.	①	②	③	④	⑤
3.	I know how I feel about different situations.	①	②	③	④	⑤
4.	I can make decisions with confidence.	①	②	③	④	⑤
5.	I can understand and control my feelings overall	①	②	③	④	⑤

1	2	3	4	5
Strongly disagree	Do not agree	Not sure	Agreed	Strongly Agree

Part C : Self-motivation can be defined as being driven to achieve, passionate about the profession and enjoying challenges (Gorji et al., (2017).

1.	I can study well even though the assignments are difficult.	①	②	③	④	⑤
2.	I'm always excited to do my job.	①	②	③	④	⑤
3.	I am willing to work hard even if the work is not interesting.	①	②	③	④	⑤
4.	I am ready to take on any task.	①	②	③	④	⑤
5.	I will never get tired of doing the work I love.	①	②	③	④	⑤



1	2	3	4	5
Strongly disagree	Do not agree	Not sure	Agreed	Strongly Agree

Part D : Self-regulation is the ability to self-regulate may have an advantage in the course of an individual's mental life, especially in an important context (Luke, 2006).

1.	I know when to back down if I have an argument with a colleague.	①	②	③	④	⑤
2.	I am able to act calmly even when I am angry.	①	②	③	④	⑤
3.	I can control my emotions even under stress.	①	②	③	④	⑤
4.	I feel guilty if I can't do a job well.	①	②	③	④	⑤
5.	I can understand and control my feelings overall	①	②	③	④	⑤



1	2	3	4	5
Strongly disagree	Do not agree	Not sure	Agreed	Strongly Agree

Part E : Relationship management is the ability to understand one's own thoughts and other thoughts to drive oneself and handle emotions better in a relationship (Poon, 2002).

1.	I am clear about my own and other people's feelings.	①	②	③	④	⑤
2.	I am able to communicate well between myself and others.	①	②	③	④	⑤
3.	I am able to fulfill personal relationships.	①	②	③	④	⑤
4.	I am able to take other people's perspectives.	①	②	③	④	⑤
5.	I can manage my emotions as a whole.	①	②	③	④	⑤

1	2	3	4	5
Strongly disagree	Do not agree	Not sure	Agreed	Strongly Agree

Part F: Cognitive abilities are "mental abilities that involve the ability to reason, plan, solve problems, think abstractly, understand complex ideas, learn quickly and learn from experience" (Gottfredson, 1997).

1.	I can distinguish between the main issues and the side issues at work.	①	②	③	④	⑤
2.	I know how to set priority rights.	①	②	③	④	⑤
3.	I can come up with creative solutions to problems that arise.	①	②	③	④	⑤
4.	I keep looking for new challenges in my job.	①	②	③	④	⑤
5.	I actively look for ways to improve my work performance at work.	①	②	③	④	⑤

1	2	3	4	5
Strongly disagree	Do not agree	Not sure	Agreed	Strongly Agree

Part G: Work performance as actions, attitudes and scalable results that employees participate in or achieve (Viswesvaran, 2000).

1.	I have an appropriate understanding of the job description in my organization.	①	②	③	④	⑤
2.	I completed my work within the stipulated time.	①	②	③	④	⑤
3.	I ensure that my work is done to a high quality standard.	①	②	③	④	⑤
4.	I am able to perform under pressure.	①	②	③	④	⑤
5.	I contribute to the overall development of the organization.	①	②	③	④	⑤

Thank you

Set of Questionnaire (Malay Version)



UNIVERSITI UTARA MALAYSIA, SINTOK, KEDAH

SOAL SELIDIK

Responden yang dihormati:

Saya seorang pelajar lepasan ijazah dalam Doktor Falsafah (PhD) (Pengurusan Awam) dari Sekolah Siswazah Kerajaan Ghazali Shafie. Saya sedang menjalankan penyelidikan tentang kesan kecerdasan emosi (EI) terhadap prestasi kerja ejen pengembangan pertanian dengan menggunakan kaedah Skala Kecerdasan Emosi Wong Law (WLEIS) yang akan memberi tumpuan kepada pekerja dalam industri Asas Tani di Malaysia. Perkaitan anda dalam kajian ini akan membantu saya mendapatkan data yang mewakili kajian ini.

Sila jawab soalan yang ditetapkan berdasarkan pemahaman anda. Jawapan anda akan direkodkan dan hanya digunakan untuk tujuan akademik. Jawapan dan maklumat responden akan kekal rahsia dan sulit. Oleh itu, tiada jawapan yang betul atau salah terhadap soalan. Jika anda mempunyai sebarang pertanyaan tentang kajian ini, sila hubungi saya.

Terima kasih atas kerjasama dan masa yang diambil untuk menjawab soal selidik ini.

Yang benar,

Penyelidik:

Fatin Syafiqah Najwa Binti Khairul Suhaimi || 016-5004169 || fykaks@gmail.com

Doktor Falsafah,

Sekolah Ghazali Shafie Graduate School of Government,

Universiti Utara Malaysia, Sintok, Kedah.

Bahagian A: Profil demografi

Sila tandakan (/) sejauh mana jawapan yang sesuai

1. Jantina :

Lelaki	①	Perempuan	②
--------	---	-----------	---

2. Etnik :

Melayu	①	India	③
Cina	②	Lain-Lain	④

3. Umur :

20 - 25 Tahun	①	31 - 35 Tahun	③
26 – 30 Tahun	②	36 Tahun - Ke Atas	④

4. Agama :

Islam	①	Kristian	③
Buddha	②	Lain-Lain	④

5. Agensi/Organisasi:

MADA	①	FAMA	③
MARDI	②	DOA	④

6. Tahap Kedudukan:

Eksekutif	①
Bukan eksekutif	②

Sila bulatkan jawapan yang sesuai

1	2	3	4	5
Sangat Tidak Setuju	Tidak Setuju	Tidak Pasti	Setuju	Sangat Setuju

Bahagian B : Kesedaran diri ialah mempunyai pemahaman yang mendalam tentang emosi, kekuatan, kelemahan, keperluan dan dorongan seseorang (Rubino dan Freshman, 2002)

1.	Saya sering boleh menentukan perasaan saya.	①	②	③	④	⑤
2.	Saya tahu perasaan saya terhadap orang lain.	①	②	③	④	⑤
3.	Saya tahu perasaan saya terhadap situasi yang berbeza.	①	②	③	④	⑤
4.	Saya boleh membuat keputusan dengan yakin.	①	②	③	④	⑤
5.	Saya boleh memahami dan mengawal perasaan saya secara keseluruhan	①	②	③	④	⑤

1	2	3	4	5
Sangat Tidak Setuju	Tidak Setuju	Tidak Pasti	Setuju	Sangat Setuju

Bahagian C : Motivasi diri boleh ditakrifkan sebagai terdorong untuk mencapai, bersemangat terhadap profesion dan menikmati cabaran (Gorji et al., (2017).

1.	Saya dapat belajar dengan baik walaupun tugas sukar.	①	②	③	④	⑤
2.	Saya sentiasa teruja untuk melakukan kerja saya.	①	②	③	④	⑤
3.	Saya sanggup bekerja keras walaupun kerja itu tidak menarik.	①	②	③	④	⑤
4.	Saya bersedia memikul apa sahaja tugas.	①	②	③	④	⑤
5.	Saya tidak akan jemu melakukan kerja yang saya minati.	①	②	③	④	⑤

1	2	3	4	5
Sangat Tidak Setuju	Tidak Setuju	Tidak Pasti	Setuju	Sangat Setuju

Bahagian D : Kawal selia sendiri ialah keupayaan untuk mengawal sendiri mungkin mempunyai kelebihan dalam perjalanan kehidupan mental individu terutamanya dalam konteks yang penting (Luke, 2006).

1.	Saya tahu bila hendak berundur jika bertengkar dengan rakan sekerja.	①	②	③	④	⑤
2.	Saya mampu bertindak dengan tenang walaupun saya marah.	①	②	③	④	⑤
3.	Saya mampu mengawal perasaan saya walaupun dalam keadaan tertekan.	①	②	③	④	⑤
4.	Saya rasa bersalah sekiranya saya tidak dapat melaksanakan tugas dengan baik.	①	②	③	④	⑤
5.	Saya boleh memahami dan mengawal perasaan saya secara keseluruhan	①	②	③	④	⑤

1	2	3	4	5
Sangat Tidak Setuju	Tidak Setuju	Tidak Pasti	Setuju	Sangat Setuju

Bahagian E : Pengurusan perhubungan ialah kebolehan untuk memahami pemikiran sendiri dan pemikiran lain untuk memacu diri sendiri dan mengendalikan emosi dengan lebih baik dalam sesuatu perhubungan (Poon, 2002).

1.	Saya jelas tentang perasaan saya sendiri dan orang lain.	①	②	③	④	⑤
2.	Saya mampu berkomunikasi dengan baik antara orang lain dan saya.	①	②	③	④	⑤
3.	Saya mampu memenuhi perhubungan peribadi.	①	②	③	④	⑤
4.	Saya mampu mengambil perspektif orang lain.	①	②	③	④	⑤
5.	Saya boleh menguruskan emosi saya secara keseluruhan.	①	②	③	④	⑤

1	2	3	4	5
Sangat Tidak Setuju	Tidak Setuju	Tidak Pasti	Setuju	Sangat Setuju

Bahagian F: Keupayaan kognitif ialah “keupayaan mental yang melibatkan kebolehan untuk menaakul, merancang, menyelesaikan masalah, berfikir secara abstrak, memahami idea yang kompleks, belajar dengan cepat dan belajar daripada pengalaman” (Gottfredson, 1997).

1.	Saya dapat mengasingkan antara isu utama dan isu sampingan di tempat kerja.	①	②	③	④	⑤
2.	Saya tahu bagaimana untuk menetapkan hak keutamaan.	①	②	③	④	⑤
3.	Saya boleh keluar dengan penyelesaian kreatif mengenai masalah yang timbul.	①	②	③	④	⑤
4.	Saya terus mencari cabaran baru dalam pekerjaan saya.	①	②	③	④	⑤
5.	Saya secara aktif mencari cara untuk meningkatkan prestasi kerja saya di tempat kerja.	①	②	③	④	⑤

1	2	3	4	5
Sangat Tidak Setuju	Tidak Setuju	Tidak Pasti	Setuju	Sangat Setuju

Bahagian G: Prestasi kerja sebagai tindakan, sikap dan hasil yang boleh berskala yang disertai atau dicapai oleh pekerja (Viswesvaran, 2000).

1.	Saya mempunyai pemahaman yang sesuai tentang huraian kerja dalam organisasi saya.	①	②	③	④	⑤
2.	Saya menyelesaikan kerja saya dalam jangka masa yang ditetapkan.	①	②	③	④	⑤
3.	Saya memastikan bahawa kerja saya dilakukan dalam kualiti standard yang tinggi.	①	②	③	④	⑤
4.	Saya mampu beraksi di bawah tekanan.	①	②	③	④	⑤
5.	Saya menyumbang kepada pembangunan keseluruhan organisasi.	①	②	③	④	⑤

Sekian

Terima kasih

Appendix C

Official Letters

All related letters in this study were included in this section.



Fatin Syafiqah Najwa Binti Khairul Suhaimi
No 161, Kampung Tanjung Sena
Mukim Tunjang
06000 Jitra
Kedah, Malaysia

Tarikh: 25 Jun 2023

Pusat Pengurusan
Sumber Manusia
Ibu Pejabat MARDI
Persiaran MARDI-UPM
43400 Serdang
Selangor

Melalui dan Salinan

Dr. Hj. Rahim Bin Romle
Penyelia
Pensyarah Kanan
Pusat Pengajian Kerajaan
Universiti Utara Malaysia

Dr. Low Kah Choon
Penyelia Bersama
Pensyarah Kanan
Pusat Pengajian Kerajaan
Universiti Utara Malaysia



Tuan,

PERMOHONAN KEBENARAN MENJALANKAN KAJIAN PENYELIDIKAN DOKTOR FALSAFAH (PhD) DI INSTITUT PENYELIDIKAN DAN KEMAJUAN PERTANIAN MALAYSIA

Dengan segala hormatnya perkara di atas adalah dirujuk.

2. Sukacita dimaklumkan kepada tuan bahawa saya ialah pelajar Doktor Falsafah (Ph.D) di Universiti Utara Malaysia (UUM), ingin memohon kebenaran daripada pihak tuan untuk menjalankan penyelidikan di agensi dan jabatan di Institut Penyelidikan dan Kemajuan Pertanian Malaysia (MARDI) cawangan Kedah dan Perlis.

3. Maklumat permohonan adalah seperti berikut:

Nama	:Fatin Syafiqah Najwa Binti Khairul Suhaimi
No. Matrik Pelajar	905886
No. Tel	:016-5004169
E-mel	: fykaks@gmail.com
Tajuk Kajian	: <i>The Impact of Emotional Intelligence on Agricultural Extension Agents' Job Performance in Malaysia Agro-Based Industries: The Mediating Effect of Cognitive Ability</i>

Sampel Kajian :Kakitangan di Institut Penyelidikan dan Kemajuan Pertanian Malaysia
(MARDI) cawangan Kedah dan Perlis.

Kaedah Kajian : Secara dalam talian (Google Form)

4. Bersama-sama surat ini saya sertakan pengesahan pelajar untuk menjalankan kajian penyelidikan.
5. Untuk maklumat lanjut, pihak tuan boleh menghubungi saya seperti yang dinyatakan di atas atau melalui penyelia dan penyelia bersama di alamat abd.rahim@uum.edu.my dan kahchoon@uum.edu.my / kclow85uum@gmail.com .
6. Sehubungan dengan itu, saya memohon kerjasama daripada pihak tuan agar saya memperoleh kebenaran untuk menjalankan penyelidikan demi meningkatkan lagi kualiti pekerja terutamanya dalam sektor pertanian di Malaysia. Segala perhatian dan keprihatinan pihak tuan amat saya hargai dan diucapkan jutaan terima kasih.

Sekian.

Yang benar,



FATIN SYAFIQAH NAJWA BINTI KHAIRUL SUHAIMI

Pelajar Doktor Falsafah

Pusat Pengajian Kerajaan



Fatin Syafiqah Najwa Binti Khairul Suhaimi
No 161, Kampung Tanjung Sena
Mukim Tunjang
06000 Jitra
Kedah, Malaysia

Tarikh: 25 Jun 2023

Pengarah
Pejabat FAMA Negeri Kedah
Lot 101c, Kawasan Perindustrian Mergong
Jalan Perak
05150 Alor Setar Kedah

Melalui dan Salinan

Dr. Hj. Rahim Bin Romle
Penyelia
Pensyarah Kanan
Pusat Pengajian Kerajaan
Universiti Utara Malaysia

Dr. Low Kah Choon
Penyelia Bersama
Pensyarah Kanan
Pusat Pengajian Kerajaan
Universiti Utara Malaysia

Puan,



PERMOHONAN KEBENARAN MENJALANKAN KAJIAN PENYELIDIKAN DOKTOR FALSAFAH (PhD) DI LEMBAGA PEMASARAN PERTANIAN PERSEKUTUAN (FAMA) NEGERI KEDAH

Dengan segala hormatnya perkara di atas adalah dirujuk.

2. Sukacita dimaklumkan kepada puan bahawa saya ialah pelajar Doktor Falsafah (PhD) di Universiti Utara Malaysia (UUM), ingin memohon kebenaran daripada pihak puan untuk menjalankan penyelidikan di Lembaga Pemasaran Pertanian Persekutuan (FAMA) Negeri Kedah.

3. Maklumat permohonan adalah seperti berikut:

Nama	:Fatin Syafiqah Najwa Binti Khairul Suhaimi
No. Matrik Pelajar	905886
No. Tel	:016-5004169
E-mel	: fykaks@gmail.com
Tajuk Kajian	: <i>The Impact of Emotional Intelligence on Agricultural Extension Agents' Job Performance in Malaysia Agro-Based Industries: The Mediating Effect of Cognitive Ability</i>

Sampel Kajian :Kakitangan di Lembaga Pemasaran Pertanian Persekutuan (FAMA) Negeri Kedah.

Kaedah Kajian :Secara dalam talian (Google Form)

4. Bersama-sama surat ini saya sertakan surat pengesahan pelajar untuk menjalankan kajian penyelidikan.
5. Untuk maklumat lanjut, pihak puan boleh menghubungi saya seperti yang dinyatakan di atas atau melalui penyelia dan penyelia bersama di alamat abd.rahim@uum.edu.my dan kahchoon@uum.edu.my / kclow85uum@gmail.com .
6. Sehubungan dengan itu, saya memohon kerjasama daripada pihak puan agar saya memperoleh kebenaran untuk menjalankan penyelidikan demi meningkatkan lagi kualiti pekerja terutamanya dalam sektor pertanian di Malaysia. Segala perhatian dan keprihatinan pihak puan amat saya hargai dan diucapkan jutaan terima kasih.

Sekian.

Yang benar,



UUM
Universiti Utara Malaysia

FATIN SYAFIQAH NAJWA BINTI KHAIRUL SUHAIMI

Pelajar Doktor Falsafah

Pusat Pengajian Kerajaan

Fatin Syafiqah Najwa Binti Khairul Suhaimi
No 161, Kampung Tanjung Sena
Mukim Tunjang
06000 Jitra
Kedah, Malaysia

Tarikh: 25 Jun 2023

Bahagian Pengurusan Sumber Manusia (Latihan)
Lembaga Kemajuan Pertanian Muda (MADA)
Ibu Pejabat MADA
Ampang Jajar
05990 Alor Setar
Kedah Darul Aman

Melalui dan Salinan

Dr. Hj. Rahim Bin Romle
Penyelia
Pensyarah Kanan
Pusat Pengajian Kerajaan
Universiti Utara Malaysia

Dr. Low Kah Choon
Penyelia Bersama
Pensyarah Kanan
Pusat Pengajian Kerajaan
Universiti Utara Malaysia



DR. LOW KAH CHOON
Senior Lecturer
School of Government
UUM College of Law, Government and
International Studies (UUM COLGIS)
Universiti Utara Malaysia

Tuan,

PERMOHONAN KEBENARAN MENJALANKAN KAJIAN PENYELIDIKAN DOKTOR FALSAFAH (PhD) DI LEMBAGA KEMAJUAN PERTANIAN MUDA (MADA) CAWANGAN KEDAH DAN PERLIS

Dengan segala hormatnya perkara di atas adalah dirujuk.

2. Sukacita dimaklumkan kepada tuan bahawa saya ialah pelajar Doktor Falsafah (PhD) di Universiti Utara Malaysia (UUM), ingin memohon kebenaran daripada pihak tuan untuk menjalankan penyelidikan di agensi dan jabatan di Lembaga Kemajuan Pertanian Muda (MADA) cawangan Kedah dan Perlis.

3. Maklumat permohonan adalah seperti berikut:

Nama	:Fatin Syafiqah Najwa Binti Khairul Suhaimi
No. Matrik Pelajar	905886
No. Tel	:016-5004169
E-mel	: fykaks@gmail.com
Tajuk Kajian	: <i>The Impact of Emotional Intelligence on Agricultural</i>

Extension Agents' Job Performance in Malaysia Agro-Based Industries: The Mediating Effect of Cognitive Ability

Sampel Kajian :Kakitangan di Lembaga Kemajuan Pertanian Muda (MADA) cawangan
Kedah dan Perlis.

Kaedah Kajian : Secara dalam talian (Google Form)

4. Bersama-sama surat ini saya sertakan pengesahan pelajar untuk menjalankan kajian penyelidikan.
5. Untuk maklumat lanjut, pihak tuan boleh menghubungi saya seperti yang dinyatakan di atas atau melalui penyelia dan penyelia bersama di alamat abd.rahim@uum.edu.my dan kahchoon@uum.edu.my / kclow85uum@gmail.com .
6. Sehubungan dengan itu, saya memohon kerjasama daripada pihak tuan agar saya memperoleh kebenaran untuk menjalankan penyelidikan demi meningkatkan lagi kualiti pekerja terutamanya dalam sektor pertanian di Malaysia. Segala perhatian dan keprihatinan pihak tuan amat saya hargai dan diucapkan jutaan terima kasih.

Sekian.

Yang benar,



FATIN SYAFIQAH NAJWA BINTI KHAIRUL SUHAIMI

Pelajar Doktor Falsafah

Pusat Pengajian Kerajaan

Fatin Syafiqah Najwa Binti Khairul Suhaimi
No 161, Kampung Tanjung Sena
Mukim Tunjang
06000 Jitra
Kedah, Malaysia

Tarikh: 25 Jun 2023

Jabatan Pertanian Negeri Kedah Darul Aman
Telok Chengai, Jalan Kuala Kedah
06600 Alor Setar, Kedah

Melalui dan Salinan

Dr. Hj. Rahim Bin Romle
Penyelia
Pensyarah Kanan
Pusat Pengajian Kerajaan
Universiti Utara Malaysia

Dr. Low Kah Choon
Penyelia Bersama
Pensyarah Kanan
Pusat Pengajian Kerajaan
Universiti Utara Malaysia



DR. LOW KAH CHOON
Senior Lecturer
School of Government
UUM College of Law, Government and
International Studies (UUM COLGIS)
Universiti Utara Malaysia

Tuan,

**PERMOHONAN KEBENARAN MENJALANKAN KAJIAN PENYELIDIKAN DOKTOR
FALSAFAH (PhD) DI JABATAN PERTANIAN NEGERI KEDAH DARUL AMAN**

Dengan segala hormatnya perkara di atas adalah dirujuk.

2. Sukacita dimaklumkan kepada tuan bahawa saya ialah pelajar Doktor Falsafah (PhD) di Universiti Utara Malaysia (UUM), ingin memohon kebenaran daripada pihak tuan untuk menjalankan penyelidikan di Jabatan Pertanian Negeri Kedah Darul Aman.

3. Maklumat permohonan adalah seperti berikut:

Nama	:Fatin Syafiqah Najwa Binti Khairul Suhaimi
No. Matrik Pelajar	905886
No. Tel	:016-5004169
E-mel	: fykaks@gmail.com
Tajuk Kajian	: <i>The Impact of Emotional Intelligence on Agricultural Extension Agents' Job Performance in Malaysia Agro-Based Industries: The Mediating Effect of Cognitive Ability</i>
Sampel Kajian	:Kakitangan di Jabatan Pertanian Negeri Kedah Darul Aman.
Kaedah Kajian	:Secara dalam talian (Google Form)

4. Bersama-sama surat ini saya sertakan pengesahan pelajar untuk menjalankan kajian penyelidikan.

5. Untuk maklumat lanjut, pihak tuan boleh menghubungi saya seperti yang dinyatakan di atas atau melalui penyelia dan penyelia bersama di alamat e-mel abd.rahim@uum.edu.my dan kahchoon@uum.edu.my / kclow85uum@gmail.com .

6. Sehubungan dengan itu, saya memohon kerjasama daripada pihak tuan agar saya memperoleh kebenaran untuk menjalankan penyelidikan demi meningkatkan lagi kualiti pekerja terutamanya dalam sektor pertanian di Malaysia. Segala perhatian dan keprihatinan pihak tuan amat saya hargai dan diucapkan jutaan terima kasih.

Sekian.

Yang benar,



FATIN SYAFIQAH NAJWA BINTI KHAIRUL SUHAIMI

Pelajar Doktor Falsafah

Pusat Pengajian Kerajaan



UUM
Universiti Utara Malaysia



WAN ZAIRI... 05/07/2023

to me, SHAZALWARD... ▾



Translate to English



Assalamualaikum.

Cik,

Dimaklumkan bahawa pihak MARDI tiada halangan untuk pihak cik menjalankan kaji selidik tersebut. Untuk urusan selanjutnya pihak cik boleh berhubung terus dengan Cik Nurhidayah binti Fazil, Penolong Pegawai Penyelidik di talian 016-7649693.

Terima kasih.

Wan Zairi bin Wan Abdul Manaff
Pengarah
MARDI Kedah

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Peringatan

Pengguna Perkhidmatan MyGovUC 2.0 adalah bertanggungjawab melindungi kerahsiaan data/maklumat Rahsia Rasmi Kerajaan. Adalah diingatkan agar pengguna sentiasa peka dengan SEMUA peraturan, arahan keselamatan dan pekeliling semasa yang berkuatkuasa bagi semua pengendalian data/maklumat Rahsia Rasmi Kerajaan yang berkaitan.



From Syafiqah KS · fykaks@gmail.com

To nurshamira@fama.gov.my

Date 11 Jul 2023, 16:24

[See security details](#)

Assalamualaikum wbt

Puan,

Saya kongsi bersama "[link](#)" borang kaji selidik untuk perhatian puan.
Maklum balas daripada pihak puan amatlah saya hargai.

Dear respondents:

I am a postgraduate student in Doctor of Philosophy (PhD) (Public Management) from School of Government, Universiti Utara Malaysia (UUM).

I would like to invite you to answer the questionnaire below which is a study on "The Impact of Emotional Intelligence on Agricultural Extension Agents' Job Performance in Malaysia Agro-Based Industries : The Mediating Effect of Cognitive Ability"

Kindly click on the link below :

<https://forms.gle/C55idYu3nJ1qq24p7>

Thank you for your cooperation and time taken to answer this questionnaire 🙏