CHAPTER 5

RESULTS

5.1 Introduction

Chapter 5 presents the results of this study. It reports the demographic characteristics of the participating employees and their supervisors, as well as the normality tests, item-total correlations analysis, Exploratory Factor Analysis (EFA), reliability analysis, and correlation analysis results. These tests were conducted using the IBM SPSS Statistics 17 software. The chapter also presents the confirmatory factor analysis (CFA), structural model assessment, mediation analysis, and hypotheses testing results. Structural Equation Modeling (SEM) with IBM Amos 18 was used to test the measurement model and structural model, as well as the research hypotheses.

5.2 Description of the Research Samples

Participants of this study were employed from a wide range of industries, including insurance, financial services, telecommunication, manufacturing, education, information technology, and properties development sectors. A total of 596 employee, 580 co-worker, and 591 supervisor questionnaires were respectively distributed in ten private organisations located in Kuala Lumpur and the state of Selangor. Of these, 502 employees, 383 co-workers, and 165 supervisors returned the completed and usable questionnaires. The multi-source data were used to reduce the problem associated with common method variance.

Tables 5.1, 5.2, and 5.3 summarize the demographic characteristics of the employees, their co-workers, and immediate supervisors, respectively.

Table 5.1

Demographic Characteristics of 502 Employees

Demographic variables		Frequency	Percentage (%)
Gender	Male	265	52.8
	Female	237	47.2
Ethnicity	Malay	299	59.6
	Chinese	107	21.3
	Indian	91	18.1
	Others	5	1.0
Age (years)	Under 25	130	25.9
	26 – 35	230	45.8
	36 – 45	92	18.3
	46 – 55	31	6.2
	Over 56	5	1.0
Marital status	Single	298	59.4
	Married	201	40.0
Academic qualification	Primary school	6	1.2
	Secondary school	81	16.1
	Trade/vocational school	23	4.6
	Diploma	134	26.7
	Bachelor degree	235	46.8
	Postgraduate degree	19	3.8
	Others	4	0.8
Gross monthly income	RM2000 or less	103	20.5
	RM2001 – RM4000	301	60.0
	RM4001 – RM6000	77	15.3
	RM6001 – RM8000	15	3.0
	RM8001 – RM10000	6	1.2
Tenure in organisation	Less than 1 year	17	3.4
	1 – 3 years	240	47.8
	4 – 6 years	187	37.3
	7 – 9 years	45	8.9
	10 years or more	13	2.6
Job designation level	Manager	16	3.2
	Executive	433	86.3
	Technical position	51	10.2
Industry category	Manufacturing	102	20.4
	Accounting/finance/insurance	136	27.0
	Education/training	97	19.3
	Telecommunication/IT	82	16.4
	Construction/property development	85	16.9

Table 5.2

Demographic Characteristics of 383 Co-workers

Demographic variables		Frequency	Percentage (%)
Gender	Male	216	56.3
	Female	167	43.7
Ethnicity	Malay	214	55.9
	Chinese	92	24.0
	Indian	73	19.1
	Others	4	1.0
Age (years)	Under 25	122	31.9
	26 – 35	201	52.5
	36 – 45	42	11.0
	46 – 55	14	3.6
	Over 56	4	1.0
Marital status	Single	234	61.1
	Married	149	38.9
Academic qualification	Primary school	4	1.0
	Secondary school	69	18.0
	Trade/vocational school	53	13.9
	Diploma	102	26.6
	Bachelor degree	134	35.0
	Postgraduate degree	18	4.7
	Others	3	0.8
Gross monthly income	RM2000 or less	88	23.0
	RM2001 – RM4000	192	50.1
	RM4001 – RM6000	84	21.9
	RM6001 – RM8000	14	3.7
	RM8001 – RM10000	5	1.3
Tenure in organisation	Less than 1 year	3	0.8
	1 – 3 years	131	34.2
	4 – 6 years	172	44.9
	7 – 9 years	57	14.9
	10 years or more	20	5.2
Job designation level	Manager	6	1.6
	Executive	346	90.3
	Technical position	31	8.1

Table 5.3

Demographic Characteristics of 165 Supervisors

Demographic variables		Frequency	Percentage
Gender	Male	95	57.6
	Female	70	42.4
Ethnicity	Malay	80	48.5
	Chinese	63	38.3
	Indian	19	11.4
	Others	7	1.8
Age (years)	Under 25	1	0.6
	26 – 35	60	36.4
	36 – 45	71	43.0
	46 – 55	17	10.3
	Over 56	8	4.9
Marital status	Single	61	37.0
	Married	101	61.2
Academic qualification	Primary school	0	0
	Secondary school	4	2.4
	Trade/vocational school	4	2.4
	Diploma	36	21.8
	Bachelor degree	93	56.4
	Postgraduate degree	19	11.5
	Others	9	5.5
Gross monthly income	RM2000 or less	1	0.6
	RM2001 – RM4000	53	32.1
	RM4001 – RM6000	86	52.1
	RM6001 – RM8000	21	12.8
	RM8001 – RM10000	4	2.4
Tenure in organisation	Less than 1 year	1	0.6
	1 – 3 years	56	33.9
	4 – 6 years	66	40.0
	7 – 9 years	33	20.0
	10 years or more	9	5.5
Job designation level	Senior manager	57	34.6
	Manager	105	63.6
	Executive	1	0.6
	Technical position	1	0.6

Table 5.1 depicts the demographic characteristics of the sample of employees who participated in the survey. Out of 502 employees, 265 (52.8 per cent) were males. Majority of them were Malays (59.6 per cent). In terms of age distribution, the sample of employees were predominantly ranged from 26 to 35 years old (45.8 per cent), followed by those under 25 years old (25.9 per cent), and the age group ranging from 36 to 45 years old (18.3 per cent). The data shows that most of the employees were young working adults. Therefore, it is not surprising that a large proportion (59.4 per cent) of the employees were singles. With regard to academic qualifications, about 27 per cent of the respondents had completed diplomas and nearly half of them (46.8 per cent) obtained bachelor degrees. In terms of monthly income, 60 per cent of them earned between RM2001 and RM4000 per month. Almost half of them had worked for their organisations within 1 to 3 years. In addition, about 86 per cent of them worked as executives. The 502 respondents came from diverse industries. Nearly half of them were from manufacturing and financial services. The rest served for education, training, telecommunication, IT, construction, and property development sectors.

Table 5.2 shows the demographic characteristics of the 383 co-workers who were involved in the survey. The sample included 216 men and 167 women. Malays, Chinese, and Indians made up 55.9 per cent, 24 per cent, and 19.1 per cent of the co-workers, respectively. Most of them were between the ages of 26 and 35 (52.5 per cent). They were mostly single (61.1 per cent) and had bachelor degrees (35 per cent). About half of the co-workers earned between RM2000 and RM4000 per month, and 79 per cent of them had been working for their organisations between 1 to 6 years. The sample was largely executives (n = 346; 90.3 per cent).

Table 5.3 shows the descriptive statistics for the demographic characteristics of the 165 supervisors who were involved in the survey. About 58 per cent of the

participating supervisors were males. In terms of ethnicity, almost half of them were Malays, whereas the rest were Chinese (38.3 per cent), and Indians (11.4 per cent). The majority of the supervisors (61.2 per cent) were married and 43 per cent of them were between 36 and 45 years old. Nearly 78 per cent of the supervisors had college and university degrees. About half of the supervisors earned their salary between RM4001 and RM6000 per month, and 40 per cent of them had worked for their respective organisations between 4 and 6 years (40 per cent). They were mostly managers (63.6 per cent) and the others were senior managers (34.6 per cent).

5.3 Data Screening

The data of this study were screened to ensure that they were correctly entered in the data file. The frequencies of all cases for each item were inspected to detect data anomalies and the out-of-range values in the data file were replaced with the correct values. The questionnaires with missing data were discarded. The normality of each observed variable was also examined to ensure that the distribution of these variables were normal. Skewness and kurtosis revealed the extent to which their distributions vary from the normal distribution. West, Finch, and Curran (1995, p. 454) recommend that variables with univariate skewness and kurtosis indices of above 2 and 7, respectively should be avoided because they indicate severe non-normality problem.

Table 5.4 shows the skewness and kurtosis of all observed variables. The data of this study had normal distributions as all indices of skewness and kurtosis were within the acceptable range. Therefore, the normality assumptions for all the observed variables in this study were met. At this early stage of the analysis, the data set for this study seemed error-free and there was no severe violation of normality. Each measurement scale was then evaluated by the results from the item-total correlations

computation, Exploratory Factor Analysis (EFA), reliability analysis, and correlation analysis. The results are reported in the following sub-sections.

Table 5.4

Skewness and Kurtosis of All Variables

Variable	Skewness	Kurtosis
Ability	-.12	-1.18
Benevolence	-1.00	1.66
Integrity	-1.10	1.48
Social undermining behaviour	.93	.29
Trust in co-workers	-1.37	5.23
OCBC	-1.01	1.58
OCBO	.21	-.07
CWBC	1.11	1.25
CWBO	.63	-.40
Task performance	-.29	-.21

Note. OCBC = co-workers directed OCB; OCBO = organisation-directed OCB; CWBC = co-workers targeted CWB; CWBO = organisation-targeted CWB.

5.4 Item-total Correlations Analysis

Item-total correlations analysis was used to evaluate all the items included in the study and to improve the internal consistency of the scales by eliminating ill-fitting items (Churchil, 1979). Hair, Black, Babin, Anderson, and Tatham (2006) suggest that the corrected item-total correlation (CITC) for each item should be .50 or greater.

Table 5.5 shows the CITC for all the measurement items. The CITC ranged from .13 to .91. Items B4, I6, T4, CWBC4, CWBC5, CWBO7, TP6, and TP7 have CITC below the threshold value of .50. As the CITC for items B4 and T4 were just slightly below .50, they were retained for subsequent analyses. However, the CITC for items below .45 were dropped from further analyses.

From the initial 76 items, six of them were removed (i.e., I6, CWBC4, CWBC5, CWBO7, TP6, and TP7), and the remaining 70 items were retained for subsequent analyses.

Table 5.5

Corrected Item-Total Correlation (CITC)

Construct	Item statement	CITC
Ability	A1. My co-workers are well qualified.	.56
	A2. I feel very confident about my co-workers' skills.	.62
	A3. My co-workers are known to be successful at the things they try to do.	.60
	A4. My co-workers have much knowledge about the work that needs to be done.	.66
	A5. My co-workers have specialized capabilities that can increase our performance.	.66
	A6. My co-workers are very capable of performing their job.	.71
Benevolence	B1. My co-workers are very concerned about my welfare.	.64
	B2. My co-workers will go out of their way to help me.	.61
	B3. My co-workers really look out for what is important to me.	.62
	B4. My co-workers would not knowingly do anything to hurt me.	.48
	B5. My needs and desires are very important to my co-workers.	.55
Integrity	I1. I never had to wonder whether my co-workers will stick to their word.	.70
	I2. My co-workers have a strong sense of justice.	.61
	I3. I like my co-workers' values.	.69
	I4. My co-workers try hard to be fair in dealings with others.	.56
	I5. Sound principles seem to guide my co-workers' behaviour.	.65
	I6. My co-workers' actions and behaviour are not very consistent. (R)	**.13**
Social undermining behaviour	SU1. My co-workers hurt my feelings.	.85
	SU2. My co-workers competed with me for status and recognition.	.81
	SU3. My co-workers criticized the way I handled things in a way that was not helpful.	.84
	SU4. My co-workers delayed work to make me look bad or slow me down.	.80
	SU5. My co-workers did not defend me when people spoke poorly of me.	.80
	SU6. My co-workers did not give as much help as promised.	.78
	SU7. My co-workers gave me incorrect or misleading information about the job.	.87
	SU8. My co-workers gave me the silent treatment.	.84
	SU9. My co-workers belittled me or my ideas.	.86
	SU10. My co-workers insulted me.	.89
	SU11. My co-workers let me know they did not like something about me.	.86
	SU12. My co-workers spread rumours about me.	.91
	SU13. My co-workers talked bad about me behind my back.	.90
Trust in co-workers	T1. I really wish I had a good way to keep an eye on my co-workers.(R)	.51
	T2. If I had my way, I wouldn't let my co-workers have any influence over the issues that are important to me.(R)	.51
	T3. I would be willing to let my co-workers have complete control over my future in the organisation.	.59
	T4. I would be comfortable giving my co-workers a task or problem which was critical to me, even if I could not monitor their actions.	.49
Co-workers-directed OCB (OCBC)	OCBC1. This employee helps other co-workers who have been absent.	.52
	OCBC2. This employee assists other co-workers with their duties.	.53
	OCBC3. This employee shares personal property with other co-workers to help their work.	.63
	OCBC4. This employee willingly gives his or her time to help other co-workers who have work-related problems.	.51

Table 5.5

Corrected Item-Total Correlation (CITC) (*Continued*)

Construct	Item statement	CITC
Co-workers-directed OCB (OCBC)	OCBC5. This employee adjusts his or her work schedule to accommodate other co-workers' requests for time off.	.52
	OCBC6. This employee shows genuine concern and courtesy toward co-workers, even under the most trying business or personal situations.	.60
	OCBC7. This employee gives up time to help other co-workers who have work or nonwork problems.	.51
	OCBC8. This employee goes out of the way to make newer co-workers feel welcome in the work group.	.53
Organisation-directed OCB (OCBO)	OCBO1. This employee keeps up with developments in the organisation.	.53
	OCBO2. This employee expresses loyalty toward the organisation.	.57
	OCBO3. This employee demonstrates concern about the image of the organisation.	.67
	OCBO4. This employee offers ideas to improve the functioning of the organisation.	.60
	OCBO5. This employee defends the organisation when other employees criticize it.	.64
	OCBO6. This employee shows pride when representing the organisation in public.	.59
	OCBO7. This employee takes action to protect the organisation from potential problems.	.62
	OCBO8. This employee attends functions that are not required but that help the organisational image.	.57
Co-workers targeted CWB (CWBC)	CWBC1. This employee acted rudely toward other co-workers at work.	.59
	CWBC2. This employee said something hurtful to other co-workers at work.	.64
	CWBC3. This employee cursed at other co-workers at work.	.57
	CWBC4. This employee made fun of other co-workers at work.	**.35**
	CWBC5. This employee played a mean prank on other co-workers at work.	**.37**
	CWBC6. This employee publicly embarrassed other co-workers at work.	.53
	CWBC7. This employee made an ethnic, religious, or racial remark at work.	.58
Organisation-targeted CWB (CWBO)	CWBO1. This employee neglected to follow my instructions.	.70
	CWBO2. This employee put little effort into his or her work.	.67
	CWBO3. This employee dragged out work in order to get overtime.	.62
	CWBO4. This employee intentionally worked slower than he or she could have worked.	.71
	CWBO5. This employee took property from work without permission.	.66
	CWBO6. This employee came in late to work without permission.	.62
	CWBO7. This employee made an ethnic, religious, or racial remark at work.	**.39**
	CWBO8. This employee littered the work environment.	.59
	CWBO9. This employee spent too much time fantasizing or daydreaming instead of working.	.58
	CWBO10. This employee discussed confidential company information with an unauthorized person.	.59
	CWBO11. This employee took an additional or longer break than is acceptable at the workplace.	.56
	CWBO12. This employee falsified a receipt to get reimbursed for more money than he or she spent on business expenses.	.58

Table 5.5

Corrected Item-Total Correlation (CITC) (*Continued*)

Construct	Item statement	CITC
Task performance	TP1. This employee adequately completes assigned duties.	.52
	TP2. This employee fulfils the responsibilities specified in his or her job description.	.55
	TP3. This employee engages in activities that will directly affect his or her performance evaluation.	.51
	TP4. This employee meets formal performance requirements of his or her job.	.54
	TP5. This employee performs the tasks that are expected of him or her.	.50
	TP6. This employee fails to perform essential duties. (R)	**.41**
	TP7. This employee neglects aspects of the job he or she is obligated to perform. (R)	**.32**

Note. (R) denotes reverse-coded item. CITC <.45 are in boldface and underlined.

Six items with CITC below .45 were eliminated, and the 70 remaining items indicated acceptable CITC scores which ranged from .48 to .91. Exploratory Factor Analysis (EFA) was also used to further refine the measurement items. The results of EFA were reported in the following section.

5.5 Exploratory Factor Analysis

A sample size of 502 cases for a total of 70 measurement items in the study exceeded the desired cases-to-item ratio of 5:1 recommended by Hair et al. (2010). Exploratory Factor Analysis (EFA) was performed on the 70 items to assess the factor structure of the scales based on the Malaysian samples. To assess the convergence and divergence among these items, principal components analysis (PCA) of factor extraction with varimax rotation was used to capture the greatest portion of total variance in a set of data with the minimum number of factors or components. The varimax orthogonal rotation was chosen to reduce the data to a set of uncorrelated measures to be subsequently used in other multivariate techniques (Hair et al., 2010).

Bartlett's test of sphericity and the Kaiser-Meyer-Olkin measure of sampling adequacy were used to determine the appropriateness of using the EFA. The

factorability is assumed when the Bartlett's test of sphericity is large and significant, and the Kaiser-Meyer-Olkin measure of sampling adequacy is greater than .60 (Coakes & Ong, 2011).

According to Hair et al. (2010), items with loadings .50 or greater on one factor are practically significant. Based on their suggestions, in this study, only items that loaded highly (i.e., .50 or higher) on the intended factor were retained for further analyses. The EFA results for the antecedents of trust in co-workers and trust in co-workers variables are reported in Section 5.5.1, and the EFA results for the outcome variables are described in Section 5.5.2.

5.5.1 Antecedents of Trust in Co-workers and Trust in Co-workers Measures

The Bartlett's test of sphericity was large and significant (12440.60; df = 528; p = .000), and the Kaiser-Meyer-Olkin measure of sampling adequacy for the ability, benevolence, integrity, social undermining behaviour, and trust in co-workers measures was .93. Therefore, factorability for these measures was assumed (Coakes & Ong, 2011).

Results from the PCA with varimax rotation showed that five factors had eigenvalues greater than 1 (see Appendix B-1). These factors accounted for about 66 per cent of the total variance. The first component (social undermining behaviour) accounted for the greatest variance in the data (29.93 per cent); the second component (ability) accounted for 10.60 per cent of the variance; the third component (integrity) accounted for 9.90 per cent, the fourth component (benevolence) accounted for 8.69 per cent, and the fifth component (trust in co-workers) accounted for 6.85 per cent.

Table 5.6

Factor Loadings for Exploratory Factor Analysis with Varimax Rotation of Items Assessing Antecedents of Trust in Co-workers and Trust in Co-workers

Factor/Scale	Factor Loading
Ability	
A1. My co-workers are well qualified.	**.68**
A2. I feel very confident about my co-workers' skills.	**.74**
A3. My co-workers are known to be successful at the things they try to do.	**.72**
A4. My co-workers have much knowledge about the work that needs to be done.	**.76**
A5. My co-workers have specialized capabilities that can increase our performance.	**.78**
A6. My co-workers are very capable of performing their job.	**.81**
Benevolence	
B1. My co-workers are very concerned about my welfare.	**.71**
B2. My co-workers will go out of their way to help me.	**.73**
B3. My co-workers really look out for what is important to me.	**.74**
B4. My co-workers would not knowingly do anything to hurt me.	**.63**
B5. My needs and desires are very important to my co-workers.	**.70**
Integrity	
I1. I never had to wonder whether my co-workers will stick to their word.	**.84**
I2. My co-workers have a strong sense of justice.	**.74**
I3. I like my co-workers' values.	**.85**
I4. My co-workers try hard to be fair in dealings with others.	**.66**
I5. Sound principles seem to guide my co-workers' behaviour.	**.71**
Social undermining behaviour	
SU1. My co-workers hurt my feelings.	**.87**
SU2. My co-workers competed with me for status and recognition.	**.83**
SU3. My co-workers criticized the way I handled things in a way that was not helpful.	**.86**
SU4. My co-workers delayed work to make me look bad or slow me down.	**.83**
SU5. My co-workers did not defend me when people spoke poorly of me.	**.83**
SU6. My co-workers did not give as much help as promised.	**.81**
SU7. My co-workers gave me incorrect or misleading information about the job.	**.89**
SU8. My co-workers gave me the silent treatment.	**.86**
SU9. My co-workers belittled me or my ideas.	**.88**
SU10. My co-workers insulted me.	**.91**
SU11. My co-workers let me know they did not like something about me.	**.88**
SU12. My co-workers spread rumours about me.	**.92**
SU13. My co-workers talked bad about me behind my back.	**.92**
Trust in Co-workers	
T1. I really wish I had a good way to keep an eye on my co-workers.(R)	**.68**
T2. If I had my way, I wouldn't let my co-workers have any influence over the issues that are important to me.(R)	**.69**
T3. I would be willing to let my co-workers have complete control over my future in the organisation.	**.77**
T4. I would be comfortable giving my co-workers a task or problem which was critical to me, even if I could not monitor their actions.	**.70**

Note. (R) denotes reverse-coded item. Factor loadings >.50 are in boldface.

Table 5.6 shows that each item had a loading greater than .50 on the expected factor. The average loading for the antecedents of trust in co-workers and trust in co-workers measures was good (.79). The detailed EFA results for the antecedents of trust in co-workers and trust in co-workers measures are shown in Appendix B-1.

5.5.2 Job Performance Measures

The Bartlett's test of sphericity for all job performance was large and significant (7595.94; df = 666; p = .000), and the Kaiser-Meyer-Olkin measure of sampling adequacy was .876. Thus, factorability for job performance measures is assumed (Coakes & Ong, 2011). The EFA yielded a five-factor solution with eigenvalues greater than 1, and these factors accounted for 52.73 per cent of the total variance (see Appendix B-2 for more detailed results).

The first component (CWBO) accounted for most of the variance in the data (14.89 per cent). The second component (OCBO) accounted for 11.01 per cent; the third component (OCBC) accounted for 9.86 per cent, the fourth component (task performance) accounted for 9.31 per cent, and the fifth component (CWBC) accounted for 7.66 per cent of the variance. Table 5.7 shows that all the factor loadings exceeded .50. Therefore, all the job performance items were retained for further analyses.

In summary, a total of 70 items were retained for subsequent analyses. The results of the EFA showed that these items have loadings of at least .50 on their intended factors. The reliability analysis was then performed to determine the internal consistency of each scale. The results of this analysis are reported in the following sub-section.

Table 5.7

Factor Loadings for Exploratory Factor Analysis with Varimax Rotation of Items Assessing Employees' Job Performance

Factor/Scale	Factor Loading
OCBC	
OCBC1. This employee helps other co-workers who have been absent.	**.64**
OCBC2. This employee assists other co-workers with their duties.	**.64**
OCBC3. This employee shares personal property with other co-workers to help their work.	**.76**
OCBC4. This employee willingly gives his or her time to help other co-workers who have work-related problems.	**.63**
OCBC5. This employee adjusts his or her work schedule to accommodate other co-workers' requests for time off.	**.64**
OCBC6. This employee shows genuine concern and courtesy toward co-workers, even under the most trying business or personal situations.	**.71**
OCBC7. This employee gives up time to help other co-workers who have work or nonwork problems.	**.63**
OCBC8. This employee goes out of the way to make newer co-workers feel welcome in the work group.	**.64**
OCBO	
OCBO1. This employee keeps up with developments in the organisation.	**.60**
OCBO2. This employee expresses loyalty toward the organisation.	**.63**
OCBO3. This employee demonstrates concern about the image of the organisation.	**.73**
OCBO4. This employee offers ideas to improve the functioning of the organisation.	**.70**
OCBO5. This employee defends the organisation when other employees criticize it.	**.73**
OCBO6. This employee shows pride when representing the organisation in public.	**.72**
OCBO7. This employee takes action to protect the organisation from potential problems.	**.74**
OCBO8. This employee attends functions that are not required but that help the organisational image.	**.70**
CWBC	
CWBC1. This employee acted rudely toward other co-workers at work.	**.77**
CWBC2. This employee said something hurtful to other co-workers at work.	**.78**
CWBC3. This employee cursed at other co-workers at work.	**.68**
CWBC6. This employee publicly embarrassed other co-workers at work.	**.65**
CWBC7. This employee made an ethnic, religious, or racial remark at work.	**.73**
CWBO	
CWBO1. This employee neglected to follow my instructions.	**.77**
CWBO2. This employee put little effort into his or her work.	**.73**
CWBO3. This employee dragged out work in order to get overtime.	**.68**
CWBO4. This employee intentionally worked slower than he or she could have worked.	**.78**
CWBO5. This employee took property from work without permission.	**.74**
CWBO6. This employee came in late to work without permission.	**.68**
CWBO8. This employee littered the work environment.	**.65**
CWBO9. This employee spent too much time fantasizing or daydreaming instead of working.	**.63**
CWBO10. This employee discussed confidential company information with an unauthorized person.	**.65**
CWBO11. This employee took an additional or longer break than is acceptable at the workplace.	**.63**
CWBO12. This employee falsified a receipt to get reimbursed for more money than he or she spent on business expenses.	**.67**

Table 5.7

Factor Loadings for Exploratory Factor Analysis with Varimax Rotation of Items Assessing Employees' Job Performance (Continued)

Factor/Scale	Factor Loading
Task Performance	
TP1. This employee adequately completes assigned duties.	**.82**
TP2. This employee fulfils the responsibilities specified in his or her job description.	**.83**
TP3. This employee engages in activities that will directly affect his or her performance evaluation.	**.82**
TP4. This employee meets formal performance requirements of his or her job.	**.77**
TP5. This employee performs the tasks that are expected of him or her.	**.75**

Note. (R) denotes reverse-coded item. Factor loadings >.50 are in boldface.
OCBC = co-workers directed OCB; OCBO = organisation directed OCB.
CWBC = co-workers targeted CWB; CWBO = organisation targeted CWB.

5.6 Internal Consistencies of the Scales

This study used Cronbach's coefficient alphas, one of the most widely used correlation coefficient (Koufteros, 1999), to determine the internal consistencies of each scale. Table 5.8 shows the means, standard deviations, and corrected item-total correlations (CITC) for each measurement item, as well as reliabilities for all scales.

Table 5.8

Means, Standard Deviations, CITC, and Reliabilities of Variables

Variable	*M*	*SD*	CITC	α
Ability				.85
A1. My co-workers are well qualified.	5.22	.83	.56	
A2. I feel very confident about my co-workers' skills.	5.16	.82	.62	
A3. My co-workers are known to be successful at the things they try to do.	5.04	.83	.60	
A4. My co-workers have much knowledge about the work that needs to be done.	5.17	.79	.66	
A5. My co-workers have specialized capabilities that can increase our performance.	5.15	.82	.66	
A6. My co-workers are very capable of performing their job.	5.18	.83	.71	
Benevolence				.80
B1. My co-workers are very concerned about my welfare.	5.55	.59	.64	
B2. My co-workers will go out of their way to help me.	5.43	.66	.61	
B3. My co-workers really look out for what is important to me.	5.47	.66	.62	
B4. My co-workers would not knowingly do anything to hurt me.	5.45	.65	.48	
B5. My needs and desires are very important to my co-workers.	5.58	.60	.55	

Table 5.8

Means, Standard Deviations, CITC, and Reliabilities of Study Variables (Continued)

Variable	*M*	*SD*	CITC	α
Integrity				.87
I1. I never had to wonder whether my co-workers will stick to their word.	5.53	.66	.77	
I2. My co-workers have a strong sense of justice.	5.37	.67	.67	
I3. I like my co-workers' values.	5.51	.65	.76	
I4. My co-workers try hard to be fair in dealings with others.	5.42	.66	.58	
I5. Sound principles seem to guide my co-workers' behaviour.	5.45	.65	.66	
Social undermining behaviour				.97
SU1. My co-workers hurt my feelings.	2.99	1.58	.85	
SU2. My co-workers competed with me for status and recognition.	3.20	1.61	.81	
SU3. My co-workers criticized the way I handled things in a way that was not helpful.	3.09	1.62	.84	
SU4. My co-workers delayed work to make me look bad or slow me down.	3.27	1.64	.80	
SU5. My co-workers did not defend me when people spoke poorly of me.	3.22	1.62	.80	
SU6. My co-workers did not give as much help as promised.	3.33	1.65	.78	
SU7. My co-workers gave me incorrect or misleading information about the job.	3.01	1.78	.87	
SU8. My co-workers gave me the silent treatment.	3.01	1.69	.84	
SU9. My co-workers belittled me or my ideas.	2.94	1.73	.86	
SU10. My co-workers insulted me.	2.66	1.79	.89	
SU11. My co-workers let me know they did not like something about me.	2.91	1.77	.86	
SU12. My co-workers spread rumours about me.	2.64	1.83	.91	
SU13. My co-workers talked bad about me behind my back.	2.75	1.84	.90	
Trust in Co-workers				.73
T1. I really wish I had a good way to keep an eye on my co-workers.(R)	5.78	.80	.51	
T2. If I had my way, I wouldn't let my co-workers have any influence over the issues that are important to me.(R)	5.83	.76	.51	
T3. I would be willing to let my co-workers have complete control over my future in the organisation.	5.65	.72	.59	
T4. I would be comfortable giving my co-workers a task or problem which was critical to me, even if I could not monitor their actions.	5.55	.69	.49	
OCBC				.82
OCBC1. This employee helps other co-workers who have been absent.	5.71	.79	.52	
OCBC2. This employee assists other co-workers with their duties.	5.71	.84	.53	
OCBC3. This employee shares personal property with other co-workers to help their work.	5.75	.72	.63	
OCBC4. This employee willingly gives his or her time to help other co-workers who have work-related problems.	5.86	.70	.51	
OCBC5. This employee adjusts his or her work schedule to accommodate other co-workers' requests for time off.	5.81	.72	.52	
OCBC6. This employee shows genuine concern and courtesy toward co-workers, even under the most trying business or personal situations.	5.70	.71	.60	
OCBC7. This employee gives up time to help other co-workers who have work or nonwork problems.	5.84	.70	.51	
OCBC8. This employee goes out of the way to make newer co-workers feel welcome in the work group.	5.62	.78	.53	
OCBO				.86
OCBO1. This employee keeps up with developments in the organisation.	4.96	.77	.53	
OCBO2. This employee expresses loyalty toward the organisation.	4.92	.77	.57	
OCBO3. This employee demonstrates concern about the image of the organisation.	4.97	.72	.67	
OCBO4. This employee offers ideas to improve the functioning of the organisation.	4.91	.72	.60	
OCBO5. This employee defends the organisation when other employees criticize it.	4.90	.75	.64	
OCBO6. This employee shows pride when representing the organisation in public.	4.96	.73	.59	
OCBO7. This employee takes action to protect the organisation from potential problems.	4.94	.73	.62	
OCBO8. This employee attends functions that are not required but that help the organisational image.	4.90	.73	.57	

Table 5.8

Means, Standard Deviations, CITC, and Reliabilities of Study Variables (Continued)

Variable	*M*	*SD*	CITC	α
CWBC				.81
CWBC1. This employee acted rudely toward other co-workers at work.	1.55	.64	.61	
CWBC2. This employee said something hurtful to other co-workers at work.	1.61	.63	.65	
CWBC3. This employee cursed at other co-workers at work.	1.59	.65	.57	
CWBC6. This employee publicly embarrassed other co-workers at work.	1.55	.64	.52	
CWBC7. This employee made an ethnic, religious, or racial remark at work.	1.48	.64	.60	
CWBO				.90
CWBO1. This employee neglected to follow my instructions.	1.83	.91	.70	
CWBO2. This employee put little effort into his or her work.	1.90	.92	.67	
CWBO3. This employee dragged out work in order to get overtime.	1.80	.93	.62	
CWBO4. This employee intentionally worked slower than he or she could have worked.	1.87	.96	.71	
CWBO5. This employee took property from work without permission.	1.60	.84	.66	
CWBO6. This employee came in late to work without permission.	1.56	.81	.61	
CWBO8. This employee littered the work environment.	1.61	.81	.58	
CWBO9. This employee spent too much time fantasizing or daydreaming instead of working.	1.90	.94	.58	
CWBO10. This employee discussed confidential company information with an unauthorized person.	1.86	.93	.60	
CWBO11. This employee took an additional or longer break than is acceptable at the workplace.	1.90	.96	.56	
CWBO12. This employee falsified a receipt to get reimbursed for more money than he or she spent on business expenses.	1.81	1.01	.57	
Task Performance				.88
TP1. This employee adequately completes assigned duties.	5.61	.85	.73	
TP2. This employee fulfils the responsibilities specified in his or her job description.	5.65	.74	.74	
TP3. This employee engages in activities that will directly affect his or her performance evaluation.	5.59	.62	.73	
TP4. This employee meets formal performance requirements of his or her job.	5.51	.75	.70	
TP5. This employee performs the tasks that are expected of him or her.	5.55	.84	.68	

Note. (R) denotes reverse-coded item. CITC = corrected item-total correlations; OCBC = co-workers directed OCB; OCBO = organisation directed OCB; CWBC = co-workers targeted CWB; CWBO = organisation targeted CWB.

Similar to prior findings by Tan and Lim (2009), the reliabilities for each of the scales assessing the co-workers' ability, benevolence, and integrity ranged between .80 and .87. The internal consistency for co-workers' social undermining behaviour scale was high (.97). This is comparable with the Cronbach's alpha (.90) that Duffy et al. (2002) reported for the same co-workers' undermining scale. With mean scores ranging from 2.64 to 3.33, it showed that the employees acknowledged that their co-workers rarely engaged in social undermining behaviour.

The trust in co-workers scale reported an internal consistency of .73, which was slightly higher than the Cronbach's alpha (.69) reported by Tan and Lim (2009). The mean scores for trust in co-workers items were between 5.55 and 5.83. Overall, the employee samples somewhat agreed that they trust their co-workers. Even though item T4 had low CITC (.49), its exclusion would have lowered the reliability of trust in co-workers scale to .69. Therefore, item T4 was retained and all the four items were included for further analyses.

The reliabilities for the outcome variables were greater than .70. The co-workers directed OCB (OCBC) and organisation-directed OCB (OCBO) displayed high internal reliabilities of .82 and .86, respectively. They were quite similar to the internal consistencies of .88 (OCBO) and .83 (OCBI) that were reported by Lee and Allen (2002). The mean scores for OCBC ranged between 5.62 and 5.86, and the mean scores for OCBO ranged between 4.90 and 4.97.

The Cronbach's alphas for co-workers targeted CWB (.81) and organisation-targeted CWB (.90) were good. They were higher than the Cronbach's alphas for CWBI (.78) and CWBO (.81), as reported by Bennett and Robinson (2000). The mean scores for CWBC ranged from 1.48 to 1.61, whereas the mean scores for CWBO ranged 1.56 to 1.90.

Lastly, the task performance scale yielded a good internal consistency with a Cronbach's alpha of .88. This was quite similar to that .89 reported by Williams and Anderson (1991). The mean scores for task performance ranged between 5.51 and 5.65, indicating that the supervisor samples somewhat agreed that the employees performed well in their tasks.

Table 5.8 shows that all the scales had acceptable internal consistencies, and the CITC of the 70 items ranging from .48 to .91. The EFA and internal reliability analysis

had provided sufficient support for the unidimensionality and reliability of each measurement scale and they could be used in the subsequent analyses (Bollen, 1989).

5.7 Correlation Analysis

Table 5.9 presents the means, standard deviations, correlations and reliabilities for all variables. The table shows that the employees' perceptions of the three factors of co-workers' trustworthiness and trust in co-workers were positively and significantly correlated with one another, with correlation coefficients ranged from .14 to .42. As expected, there was a negative and significant correlation between co-workers' social undermining behaviour and trust in co-workers.

In addition, the positive and significant correlations among trust in co-workers and co-workers directed OCB (OCBC), organisation-directed OCB (OCBO), and task performance were consistent with the predictions of Hypotheses 3a, 3b, and 5. Their correlation coefficients ranged between .16 and .49. As predicted in Hypothesis 4, trust in co-workers was negatively and significantly correlated with co-workers targeted CWB (CWBC), and organisation-targeted CWB (CWBO), with correlation coefficients of -.15 and -.15, respectively.

Table 5.9 also shows that correlations between the co-workers' trustworthiness and employees' job performance were in the expected direction. In addition, no significant correlations was found between co-workers' social undermining behaviour and employees' job performance. As correlation analysis revealed only the direct associations between the research variables, Structural Equation Modeling (SEM) was used to test direct and indirect causal relationships among the variables. The following sections report the SEM results.

Table 5.9

Summary of Means, Standard Deviations, Correlations, and Reliabilities (n = 502)

Variable	*M*	*SD*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
1. Ability	5.15	0.62	*(.85)*									
2. Benevolence	5.49	0.47	.17**	*(.80)*								
3. Integrity	5.45	0.53	.18**	.52**	*(.87)*							
4. SU behaviour	3.00	1.49	-.16**	-.06	-.13**	*(.97)*						
5. Trust in co-workers	5.70	0.55	.14**	.38**	.42**	-.17**	*(.73)*					
6. OCBC	5.75	0.50	.15**	.41**	.43**	-.08	.49**	*(.82)*				
7. OCBO	4.93	0.52	.21**	.09	.06	-.04	.16**	.13**	*(.86)*			
8. CWBC	1.55	0.48	-.18**	.-12*	-.11*	.05	-.15**	-.19**	-.06	*(.81)*		
9. CWBO	1.79	0.64	-.17**	-.11*	-.04	.05	-.15**	-.13**	-.04	.36**	*(.89)*	
10. Task performance	5.58	0.63	.27**	.21**	.18**	-.02	.20**	-.18**	.36**	-.18**	-.11*	*(.88)*

Note. Coefficients alpha are in parentheses. SU behaviour = social undermining behaviour; OCBC = co-workers directed OCB; OCBO = organisation directed OCB; CWBC = co-workers targeted CWB; CWBO = organisation targeted CWB.
*$p < .05$, **$p < .01$.

5.8 The Assumptions of SEM

Structural Equation Modeling (SEM) is a powerful analytical statistical technique (Shook, Ketchen, Hult, & Kacmar, 2004). When using SEM, data must fulfil the requirements of adequate sample size, multivariate normal distributions, and absence of collinearity problems (Kline, 1998). The examination of violations of the assumptions of SEM is necessary because it may distort the analysis of the data.

5.8.1 Sample Size Considerations

According to Kline (2005, p. 14), SEM is generally a "large-sample technique". A more complex model has more parameters compared to a simpler model (Kline, 2010), and thus analysis on more complex models needs larger samples in order to produce stable results. A sample size of below 200 is considered as too small for a model with over ten variables because it could result in unstable parameter estimates (Loehlin, 1992).

In this study, there were 502 matched employee-co-worker-supervisor questionnaires in the final sample. A sample size of 502 for 70 items met Kline's (2010) minimum requirement of 200 cases for a typical SEM analysis. Furthermore, the sample size exceeded the desired cases-to-variables ratio of 5:1 as suggested by Hair et al. (1998).

5.8.2 Assessing Normality of the Data

According to West et al. (1995), non-normal indicators could bias estimates of model fit, model parameters, and standard errors in SEM analyses. The authors propose that variables with skewness and kurtosis that exceed 2 and 7 respectively would

indicate severe non-normality. Table 5.10 shows that all estimates of skewness and kurtosis were within the acceptable range. They therefore met the normality assumption.

Table 5.10

Normality Test Results

Variable	Skewness	Kurtosis
Ability	-0.12	-1.18
Benevolence	-1.00	1.66
Integrity	-1.10	1.46
Social Undermining Behaviour	0.93	-0.29
Trust in Co-workers	-1.37	5.23
OCBC	-1.01	1.58
OCBO	0.21	-0.07
CWBC	1.11	1.25
CWBO	0.57	-0.52
Task Performance	-0.29	-0.21

Note. OCBC = co-workers directed OCB; OCBO = organisation directed OCB; CWBC = co-workers targeted CWB; CWBO = organisation targeted CWB.

5.8.3 Assessing Collinearity Among Variables

Extreme collinearity problem occurs when the observed variables in a study are measuring the same thing (Kline, 2011). According to Kline, the presence of very high correlations (i.e., usually above .90) between two observed variables indicates that they were the same variable, and it may cause the results to be statistically unstable. Table 5.9 shows that the highest correlation coefficients was between integrity and benevolence (i.e., .52), thus there was no extreme collinearity problem in this study.

Collinearity among variables was also examined by collinearity diagnostics in SPSS programme. According to Kline (2011), variance inflation factors of more than 10 and a tolerance value of lower than .10 indicate severe collinearity problems.

Table 5.11

Collinearity Test Results

Variable	Variance inflation factors	Tolerance
Ability	1.07	.94
Benevolence	1.41	.71
Integrity	1.47	.68
Social undermining behaviour	1.05	.95
Trust in co-workers	1.29	.78

Table 5.11 shows that all variance inflation factors were far below 10, and all tolerance were greater than .10. The results indicated that there were no serious collinearity problems in this study.

5.9 Confirmatory Factor Analysis

Confirmatory factor analysis (CFA) was used to assess the quality of the measurement model. A large chi-square (χ^2) value generally indicates that the model does not adequately fit the data. Models are generally accepted when their chi-square ratios (i.e., chi-square divided by degrees of freedom) are two or less (Arbuckle, 1997, as cited in Colquitt, 2001). The comparative fit index (CFI) above .900 is often associated with the desired model fit (Bentler, 1990; Hair et al., 2010). In addition, lower values of the root mean square error of approximation (RMSEA) and the standardised root mean residual (SRMR) tend to suggest a better model fit. In general, the RMSEA of less than .08 and the SRMR of below .10 are preferred (Vandenberg & Lance, 2000).

Adopting Anderson and Gerbing's (1988) recommendation for a two-step approach to SEM, the validity of measurement model was first tested. Figure 5.1 shows that there are ten latent factors and 70 indicators in the measurement model.

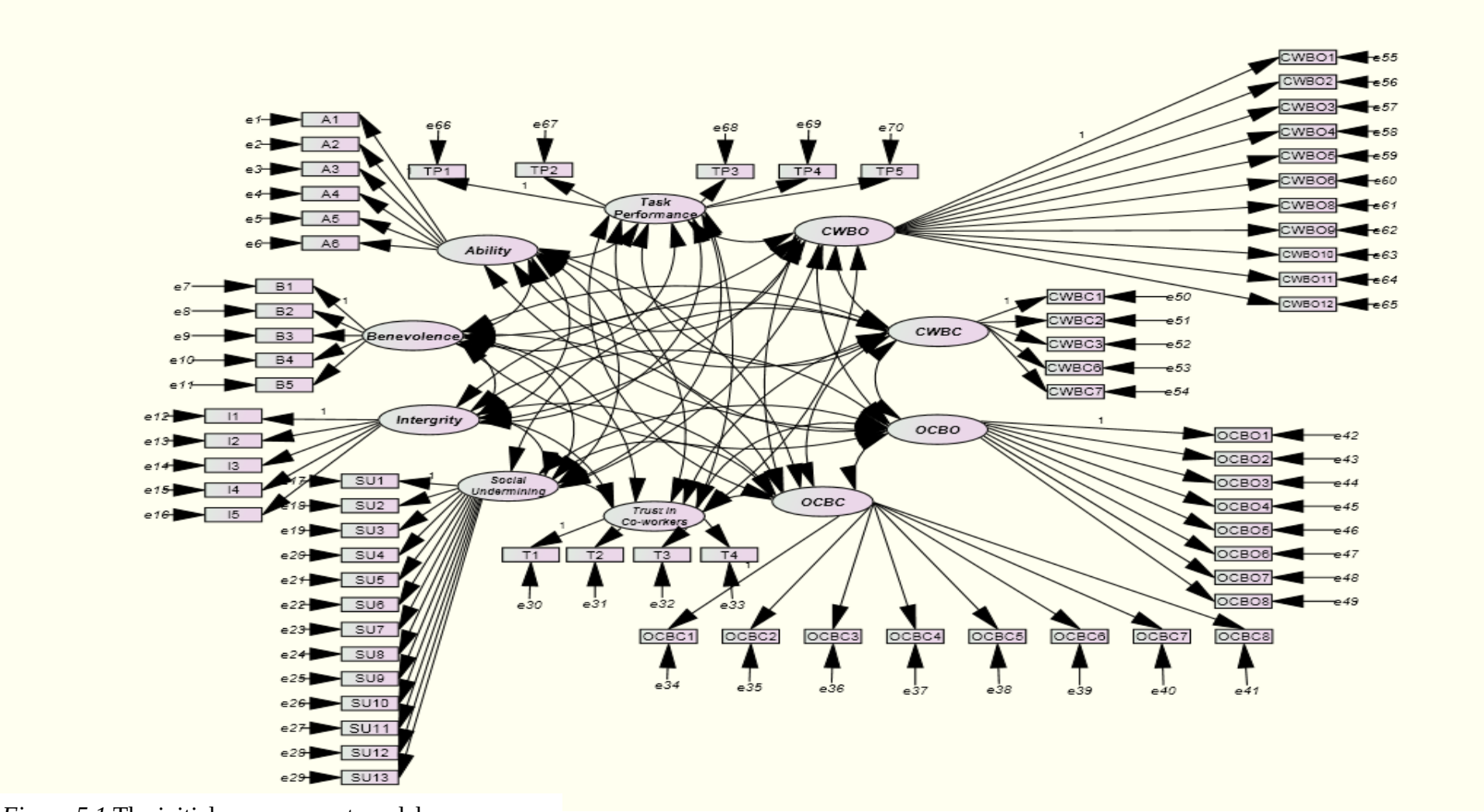


Figure 5.1 The initial measurement model.

The estimation of Model 1 yielded a χ^2 value of 4417.31, with 2300 degrees of freedom, a *p*-value of .000, a CFI of .893, a SRMR of .04, and a RMSEA of .04. The ratio of chi-square to degrees of freedom was 1.92, which was below the cut-off value of two. The goodness-of-fit indices indicated that the data fit was not entirely adequate. The value of CFI fell below the recommended value of .900 (Hair et al., 2010). However, the SRMR and the RMSEA were well within the recommended range of acceptability (Vandenberg & Lance, 2000). Table 5.12 shows the summary of the estimations of the measurement models.

It was apparent that some model modifications were needed in order to identify a model that would represent the sample data better. The standardized residuals and the modification indices (MI) help researchers to improve their measurement models (Hair et al., 2010). Based on Byrne's (2010) recommendation, items with standardized residuals greater than |4.0| may be called for deletion as they suggest potentially unacceptable degrees of error.

Table 5.12

A Summary of Goodness-of-fit Statistics for Measurement Models

CFA Model	Model Fit Measures							Item to be deleted
	χ^2	*df*	*p*	Ratio	CFI	SRMR	RMSEA	
Model 1	4417.307	2300	.000	1.921	.893	.04	.04	I4
Model 2	4189.174	2232	.000	1.877	.900	.04	.04	-

Note. CFI = comparative fit index; SRMR = standardised root mean square residual; RMSEA = root mean square error of approximation.

Model 1 was examined to identify the largest modification index (MI) and standardized residuals. The largest MI was 85.39 for the covariance of items I4 and I5. The residual for the covariance between items I4 and I5 was 6.86, which had exceeded

Byrne's (2010) suggestion of |4.0|. Item I4 was the variable with the lowest loading estimate (.52) compared to other items in Model 1, and it was subsequently dropped from the measurement model.

After eliminating item I4, Model 2 showed an improvement in the model fit. The estimation of Model 2 yielded a χ^2 value of 4189.17, with 2232 degrees of freedom. The CFI (.900), SRMR (.04), and RMSEA (.04) values were within the range of acceptable fit. The ratio of chi-square to degrees of freedom was 1.88. Although the improvement in model fit for Model 2 appeared to be trivial, the χ^2 difference between Model 1 and Model 2 was large ($\Delta\chi^2 = 228.13$). Therefore, no further modifications were made. The selected SEM results for the final measurement model (Model 2) are provided in Appendix C-1.

5.10 Construct Validity of the Measurement Model

Prior to testing the structural model, the measurement model must not only provide adequate fit but it also has to show evidence of construct validity (Hair et al., 2006). The construct validity was assessed by examining the convergent validity and discriminant validity of the data.

Convergent validity is demonstrated when, "... measures of the same construct 'hold together' or converge on the intended construct" (Mathieu & Taylor, 2006, p. 1036). It could be observed by examining the factor loadings of all the indicators on their underlying construct (Anderson & Gerbing, 1998). The factor should have loading estimates of at least .50 (Hair et al., 2010).

Table 5.13 summarizes the CFA results of measurement model. It shows that the relationship between each item and its respective variable was statistically significant, with all the indicator loadings exceeding .50. The table also depicts that the critical

ratios for all items exceeded ±1.96, therefore indicated that the parameter items were necessary to the model (Podsakoff, Williams, & Todor, 1986).

Table 5.13

Factor Loadings for the CFA of Measurement Scales

Latent construct	Item	Critical Ratio	Standardised Factor loading
1. Ability	A1		.61
	A2	11.87	.66
	A3	11.77	.65
	A4	12.93	.75
	A5	12.73	.73
	A6	13.38	.79
2. Benevolence	B1		.75
	B2	14.22	.70
	B3	14.71	.72
	B4	11.02	.54
	B5	12.68	.62
3. Integrity	I1		.94
	I2	19.03	.69
	I3	31.96	.92
	I5	14.78	.58
4. Social undermining	SU1		.86
behaviour	SU2	23.71	.81
	SU3	25.29	.84
	SU4	22.31	.78
	SU5	22.62	.79
	SU6	21.66	.77
	SU7	27.68	.88
	SU8	25.48	.85
	SU9	27.41	.88
	SU10	30.00	.92
	SU11	27.99	.89
	SU12	31.55	.94
	SU13	31.13	.93
5. Trust in co-workers	T1		.63
	T2	10.97	.65
	T3	11.47	.69
	T4	10.41	.60

Table 5.13

Factor Loadings for the CFA of Measurement Scales (Continued)

Latent construct	Item	Critical Ratio	Standardised Factor loading
6. Co-workers directed OCB (OCBC)	OCBC1	10.37	.58
	OCBC2	10.21	.57
	OCBC3	11.89	.70
	OCBC4	10.41	.58
	OCBC5	10.47	.59
	OCBC6	11.66	.68
	OCBC7	10.23	.57
	OCBC8		.60
7. Organisation-directed OCB (OCBO)	OCBO1		.58
	OCBO2	11.11	.65
	OCBO3	11.99	.73
	OCBO4	11.08	.64
	OCBO5	11.68	.70
	OCBO6	11.07	.64
	OCBO7	11.46	.68
	OCBO8	10.79	.62
8. Co-workers targeted CWB (CWBC)	CWBC1		.70
	CWBC2	13.94	.75
	CWBC3	12.66	.66
	CWBC6	11.51	.59
	CWBC7	12.87	.67
9. Organisation-targeted CWB (CWBO)	CWBO1		.76
	CWBO2	16.42	.73
	CWBO3	14.78	.66
	CWBO4	17.26	.76
	CWBO5	15.73	.70
	CWBO6	14.73	.66
	CWBO8	13.52	.61
	CWBO9	13.18	.60
	CWBO10	13.87	.63
	CWBO11	12.84	.58
	CWBO12	13.17	.60
10. Task performance	TP1	19.24	.80
	TP2		.81
	TP3	19.18	.80
	TP4	18.02	.76
	TP5	17.03	.72

Convergent validity was also examined through the measure of variance extracted (V.E.) and construct reliability. According to Fornell and Larcker (1981), V.E. is the, "...amount of variance captured by the construct in relation to the amount of

variance due to measurement error" (p. 45). The average V.E. should be .50 or more as the measures should account for at least 50 per cent of the variance in their corresponding constructs (Fornell & Larcker, 1981). In addition, a construct reliability of at least .70 is considered desirable (Nunnally, 1978, as cited in Greguras & Robie, 1998).

Table 5.14 summarizes the results of the average V.E. and construct reliability for all constructs.

Table 5.14

Variance Extracted and Construct Reliability

Construct	Average Variance Extracted	Construct Reliability
1. Ability	.70	.85
2. Benevolence	.67	.80
3. Integrity	.75	.86
4. Social undermining behaviour	.86	.97
5. Trust in co-workers	.64	.73
6. OCBC	.61	.82
7. OCBO	.66	.86
8. CWBC	.68	.81
9. CWBO	.66	.90
10. Task performance	.78	.88

Note. OCBC = co-workers directed OCB; OCBO = organisation directed OCB; CWBC = co-workers targeted CWB; CWBO = organisation targeted CWB.

Table 5.14 shows that the average V.E. for each latent construct exceeds .50, thus demonstrating discriminant validity of the measurement scales (Fornell & Larcker, 1981). The construct reliability of all the constructs ranged between .73 and .97. All constructs exceeded the benchmark of .70 as recommended by Nunnally (1978; as cited in Greguras & Robie, 1998). Thus, there was statistical evidence of discriminant validity (i.e., the extent to which a certain construct is different from other constructs).

The discriminant validity of the scales was examined further by using chi-square difference test. It was used to compare a sequence of nested models with the hypothesized 10 factor model (Bentler & Bonett, 1980). Nine nested models, ranging from the hypothesized 10 factor model to 1 factor model were compared. Table 5.15 portrays the fit indices for all the models.

Table 5.15

Goodness of Fit Statistics for Measurement Models

Model	χ^2	*df*	Ratio	CFI	RMSEA	$\Delta\chi^2$	Δdf
10 factor	**4189.17**	**2232**	**1.87**	**.900**	**.04**	**–**	**–**
8 factor	5739.02	2249	2.55	.821	.06	1549.85	17
7 factor	7428.50	2256	3.29	.735	.07	3239.33	24
9 factor (a)	5291.53	2241	2.36	.844	.05	1102.36	9
9 factor (b)	4750.60	2241	2.12	.871	.05	561.43	9
9 factor (c)	4671.11	2241	2.08	.875	.05	481.94	9
6 factor (a)	8440.19	2262	3.73	.683	.07	4251.02	30
6 factor (b)	7951.35	2262	3.52	.708	.07	3762.18	30
1 factor	14428.24	2277	6.34	.377	.10	10239.07	45

Note. Dashes represent data that were not applicable.
CFI = comparative fit index; RMSEA = root mean square error of approximation;
The 8 factor model combines ability, benevolence and integrity (ABI) of co-workers as one factor.
The 7 factor model combines ABI and social undermining behaviour as one factor.
The 9 factor (a) model combines OCB variables (OCBC and OCBO) as one factor.
The 9 factor (b) model combines CWB variables (CWBC and CWBO) as one factor.
The 9 factor (c) model combines benevolence and integrity of co-workers as one factor.
The 6 factor (a) combines all the outcomes (OCBC, OCBO, CWBC, CWBO, and task performance) as one factor.
The 6 factor (b) combines ABI, social undermining behaviour, and trust in co-workers as one factor.
The 1-factor model combines all the items into a single factor.

Table 5.15 shows that the 10 factor model provided the best fit to the data. The 8 factor model, where ability, benevolence, and integrity of co-workers were combined as one factor, was a poor fit to the data. The chi-square value for the 10 factor model

(4189.17) was significantly lower than that for the 1 factor model (14428.24). The fit indices also showed a better fit for the 10 factor model (CFI = .900, RMSEA = .04) relative to all the other models. Thus, the results supported the 10 factor model and indicated the distinctiveness of the ten constructs used in this study.

In summary, the CFA results offered clear support of the construct validity for all the latent variables in the study. Since the measurement model had proper specifications, the hypothesized structural model was assessed by using the IBM SPSS Amos 18 programme.

5.11 Structural Model

The hypothesized structural model fit was evaluated in the following sub-sections. The structural model should meet the goodness-of-fit based on the same set of fit statistics used in assessing the measurement model.

5.11.1 Structural Model Assessment

Figure 5.2 shows the initial structural model for this study. The overall fit for the hypothesized partially mediated structural model reveals a χ^2 value of 4460.01 with 2248 degrees of freedom and a normed chi-square value of 1.98. The comparative fit index (CFI) was .887, the Tucker-Lewis Index (TLI) was .882, the standardised root mean residual (SRMR) was .07, and the root mean square error of approximation (RMSEA) was .04. The CFI and TLI values failed to meet the recommended value of .900 and thus a model re-specification was considered. To further improve the structural model, some modifications were made to the model.

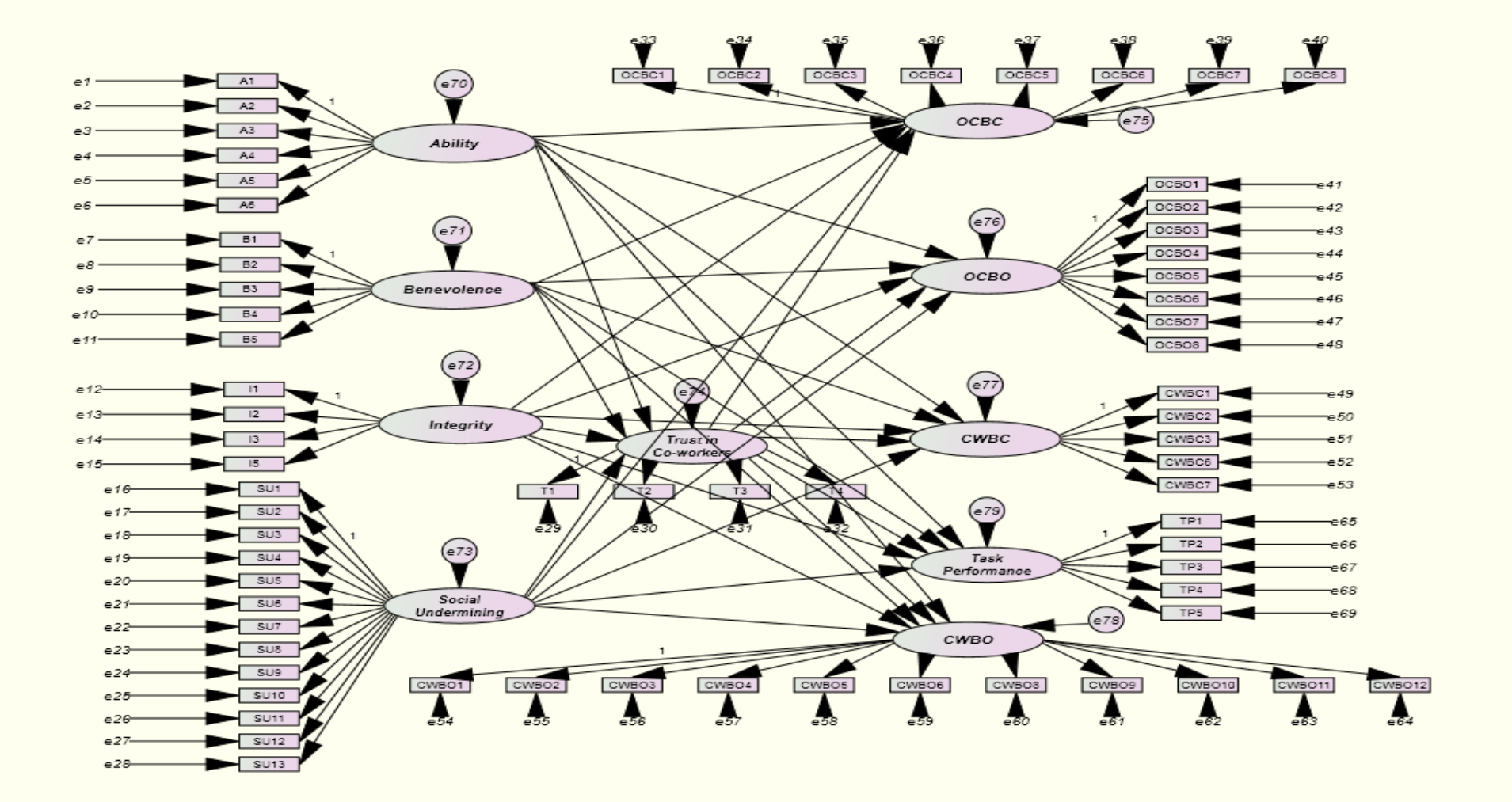


Figure 5.2 The initial structural model.

The largest modification index (MI) was identified in the model, and the error terms for items with high MI were allowed to covary as they represent the mis-specified error covariances. The largest MI in the initial hypothesized partially mediated model was 208.73 for the covariance of the error terms of items SU4 and SU5. The error terms for these items were allowed to covary. They were essentially asking the same question, even though they were worded differently. The revised model provided a better fit to the data, with a CFI of .900 and a TLI of .895 (χ^2 = 4203.49, *df* = 2247, ratio = 1.87; SRMR = .07; RMSEA = .04).

Again, the large MI in this re-specified model was identified to improve the structural model. The largest MI was 120.13 for the covariance of the error terms of items SU12 and SU13. The error terms for these items were allowed to covary (see Figure 5.3). The CFA fit statistics for this model were χ^2 was 4068.29 with 2246 degrees of freedom, and a normed chi-square of 1.81. The CFI was .907, TLI was .902, with a SRMR of .07, and a RMSEA of .04. All the measures were within the acceptable range that was associated with good fit. The selected SEM results for the final structural model are provided in Appendix C-2.

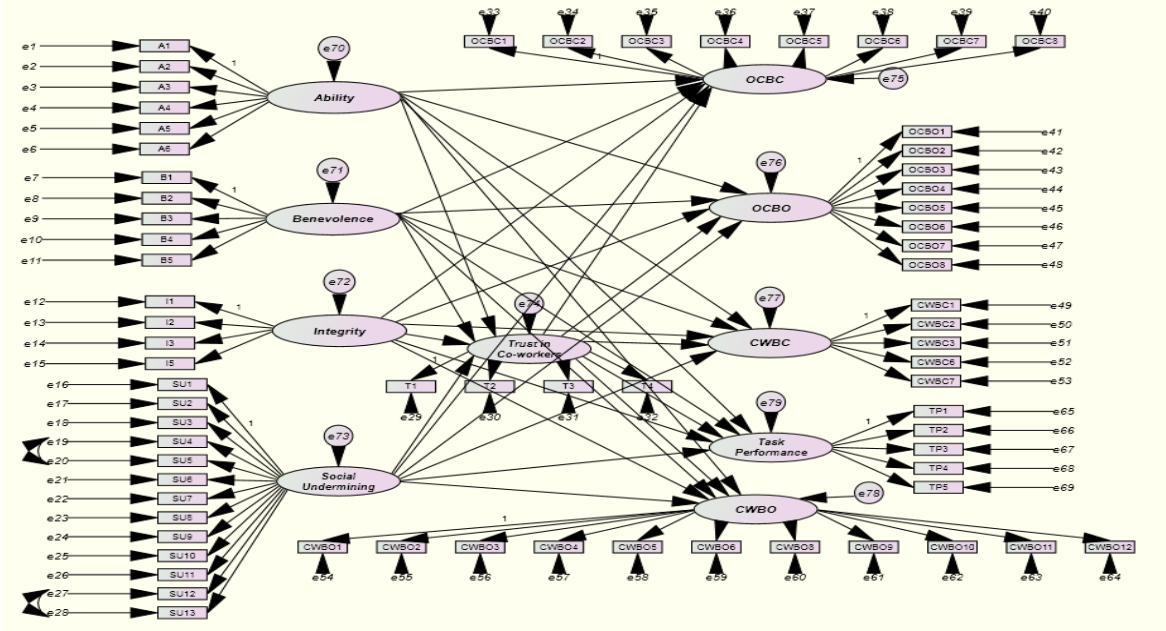


Figure 5.3 The revised structural model.

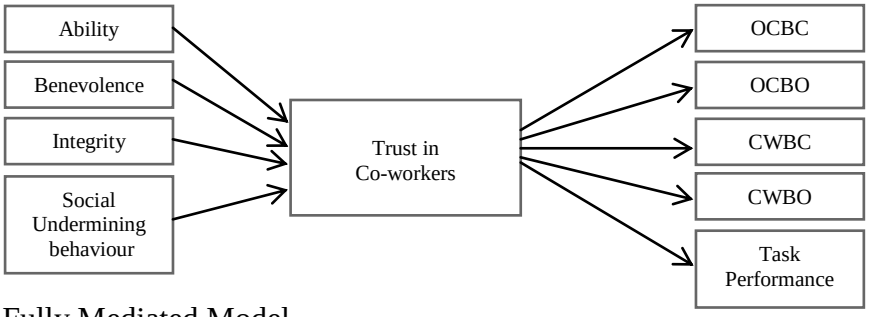
5.11.2 Mediation Analysis

Kelloway (1995) recommends that any proposed model that includes a mediated relationship should be tested against the alternative models such as the fully mediated and non-mediated models. To make direct comparisons across the models, it is important to have both the fully mediated and non-mediated models nested within the partially mediated model. In other words, the fully mediated and non-mediated models should have the same number of variables as the hypothesized partially mediated model.

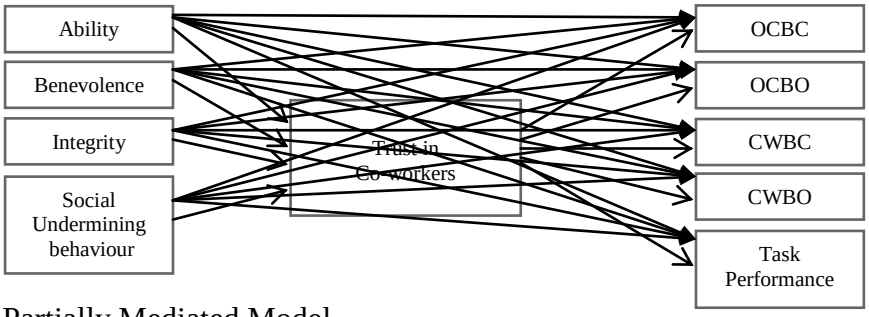
Figure 5.4 delineates the graphical representation of the alternative models for comparison purposes. Following the procedures for mediation tests by using SEM by Kelloway (1995), the hypothesized partially mediated model was compared with the fully mediated model and nonmediated model. First, the hypothesized partially mediated model was compared with a fully mediated model. The fully mediated model did not have direct paths from the antecedents to the outcomes. This model was a poorer fit than the hypothesized partially mediated model.

Next, the hypothesized partially mediated model was compared with the nonmediated model. In the nonmediated model, the pathways between the antecedents and mediators were omitted; instead, they had direct links with the outcomes. This model was also a poorer fit than the hypothesized model. This highlighted the importance of the mediating pathways.

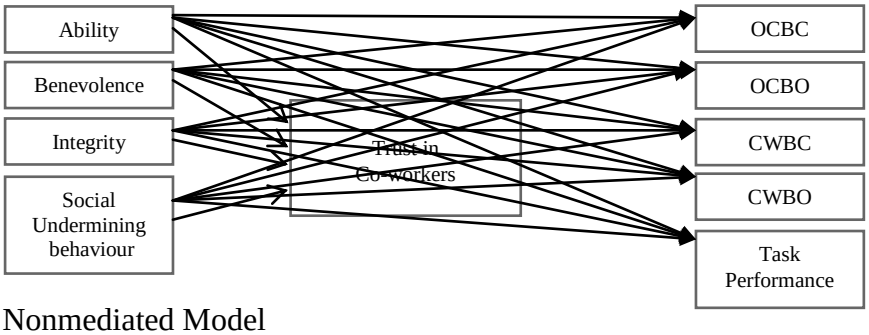
Table 5.16 shows the goodness of fit statistics for the hypothesized partially mediated model, the fully mediated model, and the nonmediated model. It indicates that the partially-mediated model best fitted the data. The results from testing the research hypotheses are reported in the following sub-section.



Fully Mediated Model



Partially Mediated Model



Nonmediated Model

Figure 5.4 Graphical representations of alternative models.

Table 5.16

The Goodness-of-Fit Statistics for the Structural Models

Model	χ^2	*df*	Ratio	CFI	TLI	SRMR	RMSEA	$\Delta\chi^2$	Δdf
Hypothesized partially mediated	4068.29	2246	1.811	.907	.902	.07	.04	–	–
Fully mediated	4161.74	2266	1.837	.903	.899	.08	.04	93.45	20
Nonmediated	4151.34	2251	1.844	.903	.898	.08	.04	83.05	5

Note. CFI = comparative fit index; TLI = Tucker-Lewis index;
SRMR = standardized root mean square residual; RMSEA = root mean square error of approximation;
Dashes represent data that were not applicable.

5.12 Hypotheses Testing Results

The hypothesized model was analyzed using Structural Equation Modeling (SEM). I examined the significance, directions, and the magnitude of the relationships among latent constructs. The results from the AMOS computer programme are shown in the Standardised Regression Weights table in Appendix C-2.

As predicted in Hypotheses 1b and 1c, co-workers' benevolence and integrity were found to have significant and positive direct relationships with trust in co-workers (β = .33, p <.001; and β = .33, p <.001, respectively). The results showed that co-workers' ability did not have significant associations with trust in co-workers. Thus, Hypothesis 1a was not supported. Hypothesis 2 was supported as co-workers' social undermining behaviour was significantly and negatively associated with trust in co-workers (β = -.14, p <.01).

In relation to Hypothesis 3, trust in co-workers was reported to be positively linked to employees' OCBC and OCBO, with β = .49, p <.001 and β = .21, p <.01, respectively. Thus, hypothesis 3a and 3b were supported. Hypothesis 4 was also supported as trust in co-workers was significantly related to CWBC and CWBO, with β = -.18, p <.05 and β = -.19, p <.01, respectively. Trust in co-workers was also significantly linked to employees' task performance (β = .19, p <.01). Thus, the Hypothesis 5 was supported.

Co-workers' ability was not significantly related to OCBC, however it was significantly and positively related to employees' OCBO (β = .24, p <.001). Thus, Hypothesis 6a was not supported, but Hypothesis 6b was supported. There was a significant and positive relationship between co-workers' benevolence and OCBC (β = .21, p <.001). However, co-workers' benevolence was not related to employees' OCBO. Therefore, Hypothesis 7a was supported, but Hypothesis 7b was not supported.

Co-workers' integrity was not significantly linked to either the employees' OCBC or OCBO. Thus, Hypotheses 8a and 8b were not supported.

Hypotheses 9a and 9b were accepted as co-workers' ability was significantly and negatively related to CWBC (β = -.18, p <.01) and CWBO β = -.17, p <.01). However, Hypotheses 10a and 10b were not supported since co-workers' benevolence had no significant relationship with employees' CWBC and CWBO. In addition, co-workers' integrity was not significantly related to employees' CWBC. Thus, Hypothesis 11a was not supported. Although co-workers' integrity had a significant relationship with employees' CWBO, the result was in opposite direction as hypothesized. Thus, Hypotheses 11b was not supported.

As predicted in Hypothesis 12 and 13, co-workers' ability and benevolence were significantly related to employees' task performance (β = .29, p <.001; and β = .11, p <.05, respectively). However, Hypothesis 14 was not supported as co-workers' integrity had no significant relationship with employees' task performance. Hypothesis 15 was not supported as co-workers' social undermining behaviour was not significantly related to employees' OCBC, OCBO, CWBC, CWBO, and task performance.

Hypothesis 16 was not supported since co-workers' ability was found to be directly related to employees' OCBO, CWBC, CWBO, and task performance. Trust in co-workers in did not mediate these relationships. Hypothesis 17 was supported. Trust in co-workers partially mediated the relationship between co-workers' benevolence and OCBC, as well as the relationship between co-workers' benevolence and task performance. In addition, trust in co-workers fully mediated the relationship between co-workers' benevolence and OCBO; between co-workers' benevolence and CWBC; between co-workers' benevolence and CWBO.

Hypothesis 18 was supported as trust in co-workers fully mediated the relationship between co-workers' integrity and OCBC; between co-workers' integrity and OCBO; between co-workers' integrity and CWBC; between co-workers' integrity and CWBO; and between co-workers' integrity and task performance.

In addition, trust in co-workers fully mediated the relationships between co-workers' social undermining behaviour and all the employees' job performance (OCBC, OCBO, CWBC, CWBO, and task performance). Thus, Hypothesis 19 was supported.

Since the non-significant paths did not provide meaningful interpretations of the parameter estimates, the paths that were not significant were removed from the structural model. Figure 5.5 shows the significant pathways for the final model. The final structural model with only significant paths yielded acceptable model fit, with an overall χ^2 value of 4083.89, with 2261 degrees of freedom, a chi-square ratio of 1.806, a CFI of .907, a TLI of .903, the SRMR of .074 and the RMSEA of .040 (see Appendix C-3 for more detailed results).

5.13 Summary of Hypothesis Testing Results

In this study, H1b, H1c, H2, H3a, H3b, H4a, H4b, H5, H6b, H7a, H9a, H9b, H12, H13, H17a, H17b, H17c, H17d, H17e, H18a, H18b, H18c, H18d, H18e, H19a, H19b, H19c, H19d, and H19e were supported.

Table 5.17 summarizes the hypothesis testing results. Hypotheses supported are in boldface.

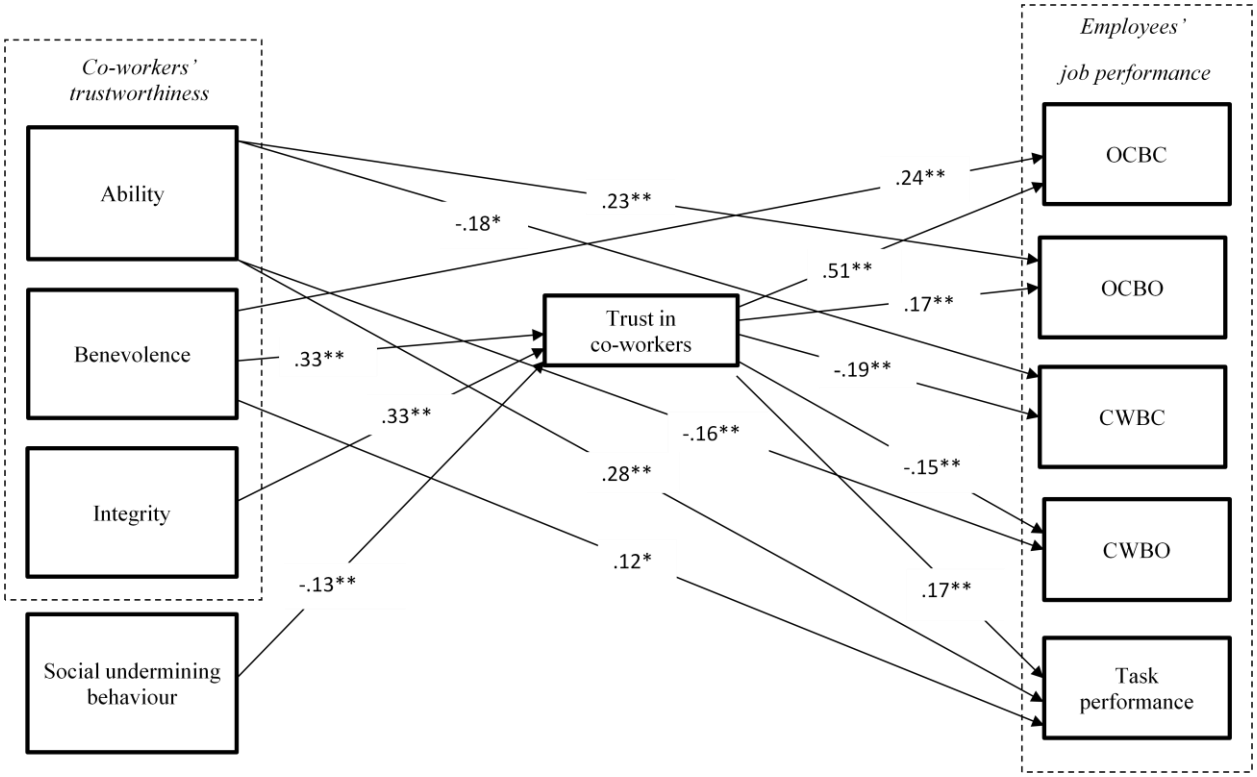


Figure 5.5 Significant pathways for the final model.
Note. Standardised parameter estimates are reported (see Appendix C-3).
OCBC = co-workers directed organisational citizenship behaviour; OCBO = organisation-directed organisational citizenship behaviour; CWBC = co-workers targeted counterproductive work behaviour; CWBO = organisation-targeted counterproductive work behaviour.
*p <.05; **p <.01.

Table 5.17

Summary of Hypothesis Testing Results

Hypothesis	Findings
H1a: The perceived ability of co-workers is positively related to trust in co-workers.	Not supported
***H1b:* The perceived benevolence of co-workers is positively related to trust in co-workers.**	Supported
***H1c:* The perceived integrity of co-workers is positively related to trust in co-workers.**	Supported
***H2:* Co-workers' social undermining behaviour is negatively related to trust in co-workers.**	Supported
***H3:* Trust in co-workers is positively related to (a) co-workers directed OCB (OCBC) and (b) organisation-directed OCB (OCBO).**	Supported
***H4:* Trust in co-workers is negatively related to (a) co-workers targeted CWB (CWBC) and (b) organisation-targeted CWB (CWBO).**	Supported
***H5:* Trust in co-workers is positively related to task performance.**	Supported
***H6:* Co-workers' ability is positively related to** (a) co-workers directed OCB (OCBC) and **(b) organisation-directed OCB (OCBO).**	H6a Not supported H6b Supported
***H7:* Co-workers' benevolence is positively related to (a) co-workers directed OCB (OCBC)** and (b) organisation-directed OCB (OCBO).	H7a Supported H7b Not supported
H8: Co-workers' integrity is positively related to (a) co-workers directed OCB (OCBC) and (b) organisation-directed OCB (OCBO).	Not supported
***H9:* Co-workers' ability is negatively related to (a) co-workers targeted CWB (CWBC) and (b) organisation-targeted CWB (CWBO).**	Supported
H10: Co-workers' benevolence is negatively related to (a) co-workers targeted CWB (CWBC) and (b) organisation-targeted CWB (CWBO).	Not supported
H11: Co-workers' integrity is negatively related to (a) co-workers targeted CWB (CWBC) and (b) organisation-targeted CWB (CWBO).	Not supported
***H12:* Co-workers' ability is positively related to task performance.**	Supported
***H13:* Co-workers' benevolence is positively related to task performance.**	Supported
H14: Co-workers' integrity is positively related to task performance.	Not supported
H15: Co-workers' social undermining behaviour is related to (a) co-workers directed OCB (OCBC), (b) organisation-directed OCB (OCBO), (c) co-workers targeted CWB (CWBC), (d) organisation-targeted CWB (CWBO), and (e) task performance.	Not supported
H16: Trust in co-workers mediates the relationships between co-workers' ability and (a) co-workers directed OCB (OCBC), (b) organisation-directed OCB (OCBO), (c) co-workers targeted CWB (CWBC), (d) organisation-targeted CWB (CWBO), and (e) task performance.	Not supported

Table 5.17

Summary of Hypothesis Testing Results (Continued)

Hypothesis	Findings
H17: Trust in co-workers mediates the relationships between co-workers' benevolence and (a) co-workers directed OCB (OCBC), (b) organisation-directed OCB (OCBO), (c) co-workers targeted CWB (CWBC), (d) organisation-targeted CWB (CWBO), and (e) task performance.	Supported
H18: Trust in co-workers mediates the relationships between co-workers' integrity and (a) co-workers directed OCB (OCBC), (b) organisation-directed OCB (OCBO), (c) co-workers targeted CWB (CWBC), (d) organisation-targeted CWB (CWBO), and (e) task performance.	Supported
H19: Trust in co-workers mediates the relationships between social undermining behaviour and (a) co-workers directed OCB (OCBC), (b) organisation-directed OCB (OCBO), (c) co-workers targeted CWB (CWBC), (d) organisation-targeted CWB (CWBO), and (e) task performance.	Supported

Note. Hypotheses supported are in boldface. OCB = organisational citizenship behaviour; CWB = counterproductive work behaviour.

5.14 Conclusion

This chapter described the results from analyzing the data obtained from a primary survey of employees, their co-workers, and immediate supervisors. The research hypotheses were tested using AMOS and the results were explained in the different sections of the chapter. The results showed significant mediation effects of trust in co-workers in the relationships between co-workers' benevolence and employees' job performance; between co-workers' integrity and employees' job performance; and between co-workers' social undermining behaviour and employees' job performance. The research findings are discussed in Chapter 6. In addition, the chapter discusses the theoretical implications, managerial implications, and limitations of this study.