Understanding Psychological Readiness of Singapore Armed Forces (SAF) Army Commanders for Protection of Installation Duties

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Note: The opinions expressed in this paper are those of the author and are not the official position of the Singapore Armed Forces or the Ministry of Defence, Singapore.

Abstract

This study explores the concept of psychological readiness of SAF Army commanders in the protection of key military and civilian installations in Singapore following the Sept 11 Terrorist attacks on USA. The present study examines a model of inter-relationships between five constructs: Mission Psychological Readiness, Mission Confidence, Perceived Cohesion, Commitment to Mission and Social Support. Surveys were conducted from Oct 2001 to Aug 2003 with 510 commanders in active units that were scheduled for the Protection of Installation (POI) duties. The hypothesized relationships among the constructs were tested using structural equation modelling and the majority of fit indices obtained from the data were within conventional standards of good model fit, lending support towards the hypothesized relationships.

Background

Following the Sept 11 terrorist attacks on USA, and the subsequent arrest of *Jemaah Islamiah* terrorist cells in South East Asia and Singapore,[2] the SAF responded to terrorist threats by strengthening the defences of local key military and civilian installations with the deployment of Army units for monthly POI duties. This study focuses on understanding the psychological readiness of Army commanders [3] for POI duties.

Past research (Marshall, 1947; Kellett, 1982; Shalit, 1988) found that the morale and psychological readiness of soldiers for war and operations are dependent on the soldiers' confidence in victory, commitment to the cause of engaging and remaining in conflict, and the small unit cohesion and personal bonds between soldiers. However, these earlier studies focused on the aforementioned constructs as antecedents of combat effectiveness. This study, on the other hand, aims to examine whether these same antecedents of psychological readiness can be generalised to a non-combat environment (a POI deployment).

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[2] For an account of the *Jemmah Islamiah* terrorist group's plans to attack targets in Singapore, refer to the white paper published by the Singapore Ministry of Home Affairs (http://www2.mha.gov.sg/mha/detailed.jsp?artid=667&type=4&root=0&parent=0&cat=0&mode=arc)

[3] The term commander is used in the generic sense as reference to either an enlisted non-commissioned officer or a commissioned officer holding command and leadership appointments in an Army unit.

In this study, the key construct of Mission Psychological Readiness and its inter-relationships with various key antecedent variables were examined in a five-factor model. The constructs are defined as follows:

Mission Psychological Readiness: A state of mental and emotional preparedness and readiness for a POI mission characterised by high morale. This includes the readiness to engage targets identified as terrorist threats.

Mission Confidence: Commanders' confidence in the mission. This includes commanders' self-efficacy, confidence in their superiors and subordinates for the POI mission.

Mission Commitment: The personal belief in the importance and need for POI missions and the willingness to participate in these missions.

Perceived Cohesion Amongst Commanders: The perceived ability of commanders to work well together and mutual trust that other commanders will do their part during the POI mission.

Social Support for Mission: The support and encouragement from family and friends that POI duties are important and meaningful.

The following relationships were hypothesized in this study:

H_1: Mission Confidence will be moderately and positively related to Mission Psychological Readiness. A commander who is confident in the POI mission would be a commander who is also psychologically prepared and ready for the mission. However, given the relatively 'peaceful' POI environment with ambiguous terrorist threats (i.e. without a clear and visible enemy), being confident in the mission alone would not suffice for Mission Psychological Readiness.

H_2: Commitment to Mission will be strongly and positively related to Mission Psychological Readiness. A Commander that is committed to the POI mission should be prepared and ready to perform the tasks required in the POI mission, including being prepared to engage identified terrorist threats. As such strong conviction in the importance and need for the POI duty should contribute significantly towards Mission Psychological Readiness.

H_3: Perceived Cohesion amongst Commanders will be weakly and positively related to Mission Confidence. Cohesive commanders should have greater confidence in successfully discharging their duties in a POI mission.

H_4: Social Support for Mission will be moderately and positively related to Mission Confidence. Commanders with families and close friends that believe in the need for and importance of deploying SAF troops for POI duties should anticipate little distractions while on duty and should thus contribute towards commanders' confidence in the mission.

H_5: Social Support for Mission will be strongly and positively related to Commitment to Mission. A commander should be personally committed to the POI mission if key influencers of close friends and family believe in the importance of the mission and lend support to the commander.

Method

Sample. The data was drawn from commanders in active[4] units that each served a one month POI duty between Oct 2001 and Aug 2003. A split-sample approach was adopted whereby the total sample was randomly split (50:50) into a calibration sample and validation sample. Two samples of equal size were studied: 255 Army commanders, with both regulars and Full-time National Service (NSF) in each group (from non-commissioned officers to junior commissioned officers). Both samples were controlled for type of service (Regular and NSF), rank, combat vocation type (Infantry or Support Arms), race, religion and deployment location.

Procedure. The data for this study were extracted from a non-anonymous but confidential questionnaire that surveyed commanders' perceptions and attitudes towards aspects of POI duty and terrorism prior to deployment for duty.

Measures. The items in the survey instrument were self-developed. There were at least 2 items measuring each construct, resulting in a total of 14 items for analysis. The constructs, survey items, and response options are presented in Table 1 below:

Table 1. List of constructs, survey items and response options.

Construct	Survey Items	Response Options
1. Mission Psychological Readiness	1. "How is your morale?"	Very Low, Low, Average, High, Very High
	2. "I am prepared to fire my weapon against targets identified as threats."	Strongly Disagree, Disagree, Neither Agree or Disagree, Agree, Strongly Agree
	3. "I am prepared to risk my life to accomplish my mission."	Strongly Disagree, Disagree, Neither Agree or Disagree, Agree, Strongly Agree
2. Confidence for Mission	1. "How confident are you in carrying out your tasks in this operation?"	Very Low, Low, Average, High, Very High
	2. "How confident are you in your men's ability to execute their tasks in this operation?"	Very Low, Low, Average, High, Very High
	3. "How confident are you in your superior commanders for this mission?"	Very Low, Low, Average, High, Very High
	4. "How ready are you for this mission?"	Very Low, Low, Average, High, Very High
3. Personal Commitment to Mission	1. "I will put in effort to do my task well."	Strongly Disagree, Disagree, Neither Agree or Disagree, Agree, Strongly Agree
	2. "I believe this mission is meaningful."	Strongly Disagree, Disagree, Neither Agree or Disagree, Agree, Strongly Agree
	3. (RC) "If given a choice, I would rather not participate in this mission."	Strongly Disagree, Disagree, Neither Agree or Disagree, Agree, Strongly Agree
4. Perceived Cohesion	1. "How well do your fellow commanders work together?"	Very poor, Poor, Average, Good, Very Good
	2. "How much do you trust your fellow commanders to do their part?"	Very little, A little, Average, Quite a lot, A lot
5. Social Support	1. (RC) "My family does not support my participation in this mission."	Strongly Disagree, Disagree, Neither Agree or Disagree, Agree, Strongly Agree
	2. (RC) "My close friends think that this mission is a waste of time"	Strongly Disagree, Disagree, Neither Agree or Disagree, Agree, Strongly Agree

Note: (RC) indicates that the responses have been reverse-scored.

[4] The SAF is a citizen's armed force made up of active and reserve components with a central professional corps of regulars. All male citizens have to serve an active component of two to two-and-a-half years service (as National Service Full-time, or NSF), after which they will serve in the reserve corps (as NSmen) with thirteen years of service with annual call-ups. Here, regulars and active conscripts form this study's sample. For more information on Singapore's Defence Policies and the SAF, refer to Huxley, T. (2000)

Results

Scale Reliabilities and Inter-correlations. The scale reliabilities (internal consistency Cronbach Alpha) and inter-correlations are presented in Table 2.1 below:

Table 2.1: Scale Reliabilities and Inter-correlations (N=510)

Scale	Cronbach Alpha	1	2	3	4	5
1. Mission Psychological Readiness	.60	1.00				
2. Confidence for Mission	.80	.87	1.00			
3. Personal Commitment to Mission	.71	.92	.68	1.00		
4. Perceived Cohesion	.78	.54	.57	.46	1.00	
5. Social Support	.55	.90	.73	.93	.49	1.00

Note: $p<0.05$ for all correlations

Factor Loadings of Items. The standardised factor loadings, error variances of the survey items, composite reliability of the constructs and average variance extracted are presented in Table 2.2 below. However, the average variance extracted from two of the constructs of Mission Psychological Readiness and Social Support were below 0.5, indicating the slightly higher degree of measurement error in the indicators for these two constructs. However, given the majority of the constructs' composite reliabilities of 0.60 or above (with the exception of social support), the indicators provide sufficiently reliable measurement of the constructs.

Table 2.1: Standardised Factor Loadings of Survey Items

Construct	Survey Items	Indicator Loading	Error Variance	Composite Reliability (Average Variance Extracted)
1. Mission Psychological Preparedness	1. "How is your morale?"	.78	.39	.66 (.41)
	2. "I am prepared to fire my weapon against targets identified as threats."	.42	.83	
	3. "I am prepared to risk my life to accomplish my mission."	.67	.55	
2. Mission Confidence	1. "How confident are you in carrying out your tasks in this operation?"	.83	.31	.85 (.59)
	2. "How confident are you in your men's ability to execute their tasks in this operation?"	.78	.40	
	3. "How confident are you in your superior commanders for this mission?"	.77	.41	
	4. "How ready are you for this mission?"	.69	.52	
3. Personal Commitment to Mission	1. "I will put in effort to do my task well."	.73	.47	.82 (.60)
	2. "I believe this mission is meaningful."	.79	.37	
	3. (RC) "If given a choice, I would rather not participate in this mission."	.80	.36	
4. Perceived Cohesion	1. "How well do your fellow commanders work together?"	.85	.27	.88 (.78)
	2. "How much do you trust your fellow commanders to do their part?"	.92	.16	
5. Social Support	1. (RC) "My family does not support my participation in this mission."	.64	.59	.57 (.40)
	2. (RC) "My close friends think that this mission is a waste of time"	.62	.62	

Models' Goodness of Fit. To test the hypothesized model of relations, the data were analysed using covariance structure modelling with LISREL 8.3 (Jöreskog & Sörbom, 1993) using maximum likelihood estimation. To test the model's robustness, a series of nested model testing was carried out with increasing constraints on the parameters (Meredith, 1993; Reise, Widaman, & Pugh, 1993) across the two samples. Firstly, loose replication approach was adopted (configural invariance), where values of all parameters were allowed to differ between the calibration and validation model. This was followed by a moderate replication strategy (weak factorial invariance) whereby the factor loadings for the items were held constant for both samples to assess measurement invariance. Lastly, a stricter replication method (strong factorial invariance) whereby the structural relationship parameters, were additionally forced to be identical across both calibration and validation samples.

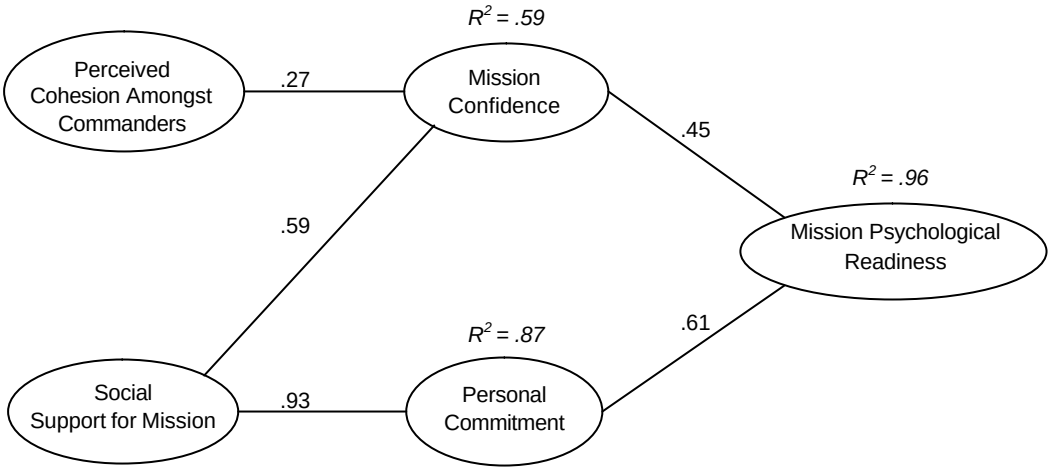
Table 3: Goodness of Fit Indices and χ^2 Values for Various Models

Models	df	χ^2	$\Delta\chi^2$	RMSEA	SRMR	GFI	NNFI	CFI
M1: Models with configural invariance	142	581.75	-	.110	.067	.85	.84	.88
M2: Models with weak factorial invariance (factor loadings invariant across both samples)	151	589.99	-	.107	.069	.85	.85	.88
M2-M1	9	-	8.24^{ns}	-	-	-	-	-
M3: Strong Factorial Invariance (factor loadings and structural relationship parameters invariant across both samples)	156	593.25	-	.105	.069	.85	.86	.88
M3-M2	5	-	3.26^{ns}	-	-	-	-	-

Note: ^{ns} = $\Delta\chi^2$ is not significant at $p<0.05$

As shown in Table 3 above, the results indicate that the basic structural model was applicable across the two samples ($\Delta\chi^2$ (9) = 8.24 for M2-M1 was not significant), hence suggesting weak factorial equivalence among both calibration and validation models. Furthermore, with all the structural relationship parameters, in addition to the factor loadings, constrained to be equal, the structural model was applicable across the both samples ($\Delta\chi^2$ (5) = 3.26 for M3-M2 was not significant). The final model as derived from combining both calibration and validation samples is illustrated in Figure 1 overleaf, with the respective fit indices presented in Table 4. Fit indices of root mean square error of approximation (RMSEA=.093), goodness of fit index (GFI=.90), and comparative fit index (CFI=.91) are within the conventional standards of a good model fit. While the standardized root mean square residual (SRMR=.051) and non-normed fit index (NNFI=.89) lie just beyond conventional standards (SRMR<.050 and NNFI=.90) of good model fit. Taken together, the results suggest an acceptable model fit.

Figure 1: Model for Combined Sample



Note: All paths could be constrained to be equal across both calibration and validation samples.

Table 4: Goodness of Fit Indices and χ^2 Value for Final Model

Model	df	χ^2	RMSEA	SRMR	GFI	AGFI	NFI	NNFI	CFI
Combined Model	71	382.30	.093	.051	.90	.86	.90	.89	.91

Discussion

The findings obtained supported the hypothesized relationships. The less than ideal fit obtained in this study was most likely due to the design of the survey items. Increasing the number of items for each construct and improving the items in the future should result in better-fitting results (in particular, items for the construct of social support).

Social support is important in building commitment to the mission as well as contributing positively towards a commander's sense of confidence for a POI mission. Commanders' personal commitment to the mission also contributed towards their sense of being psychologically prepared and ready for a POI mission. These findings are not surprising given the unique operating environment of POI missions, whereby the enemy is faceless and ambiguous, thus requiring commanders to be highly committed to the mission before feeling psychologically prepared to engage terrorist targets.

In line with past research on the confidence of soldiers prior to combat (Shalit, 1988), the commanders' confidence about an impending mission is an important predictor of psychological readiness. However, the degree to which mission confidence and psychological readiness is predictive of performance in a POI mission still remains to be answered. The perceived cohesion amongst commanders in a POI mission is important towards building confidence for the mission as commanders have to operate closely during peacetime in a relatively non-benign environment with other commanders. Closer cohesion should thus contribute towards greater confidence for the mission, and in turn, a greater sense of being prepared and ready for the POI mission.

The results suggests the importance of social support for a POI mission in a conscripted armed force like the SAF. The relative importance of cohesion between commanders, in addition to preparing their knowledge and skill-sets, should also not be neglected towards preparing soldiers for such duties.

Future research is aimed at improving the items in the questionnaire to better reflect the underlying constructs and to test the hypothesized model amongst reserve commanders, as well as examining the inter-relation of other antecedents that will affect mission psychological readiness. Of interest is also the translation of mission psychological preparedness and readiness into mission performance and effectiveness, which was not examined in this study due to the lack of performance criteria data. Lastly, future research by ABSD is also moving towards examining soldier performance issues of the effects of human circadian rhythms and sleep deprivation on vigilance during POI operations.

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