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The Adaptation of the Motivation to Lead Instrument to the Estonian Military Context

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Abstract

Purpose: This study is a contribution to the validation of the Motivation to Lead (MTL) scale proposed by Chan and Drasgow (2001) in order to measure three types of motivation to be a leader: affective, social-normative and calculative. This research examines the psychometrical properties of the MTL scale in the Estonian context.

Methodology: The sample of 517 military and non-military individuals from the Estonian Defence Forces, Estonian Police and students from Tallinn University participated in the study. The original MTL scale was expanded by with the addition of ideological and patriotic dimensions proposed by Amit and colleagues (2007). The factorial structure of the MTL Scale was analysed by using exploratory and confirmatory factor analysis (respectively N = 170 and N = 347).

Findings: The results confirmed that both three- and five-component MTL scales are applicable in the Estonian context; the pool of 35 items was reduced into 25 items with good internal reliability. Moreover, the results showed correlations between leadership self-efficacy and MTL components, and differences between leaders' and non-leaders' MTL. The results indicate that the MTL scale can be a reliable and useful instrument to measure leadership motivation in the Estonian military context.

Originality: This study is the first to adapt the MTL scale to the Estonian context. In addition, it examines the validity of ideological and patriotic MTL as part of the general MTL construct outside of the Israeli samples.

Keywords: motivation to lead, leadership self-efficacy, scale validation

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Introduction

Several models of leadership have motivation as an important element (for instance the skills and psychodynamic approaches defined by Northouse, 2010). The question of why some individuals are more willing than others to take on leadership roles is highly relevant to the understanding of leadership. In the literature, there has been a notable increase of interest in this question, perhaps because it might help to explain the emergence of leadership (Felfe and Schyns, 2014). Some researchers have identified three sets of components contributing to leadership: 1) potential – personal characteristics which support leadership behaviour; 2) motivational; 3) and development – connected with the process of individual growth (Judge, Bono, Ilies and Gerhardt, 2002). The first of them, potential, has been the most popular among researchers such as Popper, Amit, Gal, Mishkal-Sinai and Lisak (2004). However, Amit, Lisak, Popper and Gal (2007) noted that the motivational component has not been empirically explored from the MTL perspective. Therefore, the model to understand leaders´ MTL along with their personality, motivational and developmental factors as proposed by Chan and Drasgow (2001) could make a valuable contribution to the leadership literature. Thus, this article contributes to the knowledge of the motivational aspect of leadership by translating the MTL instrument into the Estonian language.

The first part of this article gives a theoretical overview of MTL and its relations to other constructs. The second part introduces and then discusses the results of the empirical study with special attention to the psychometrical properties of the MTL measurement instrument. This research is focused on adapting the MLT scale to the Estonian context and analysing the scale's psychometric properties. The results will produce a useful and reliable research instrument for social and organisational psychology in the Estonian context and therefore can be used in the Estonian language. It is worth mentioning that the majority of the studies on MTL have used young subjects (average age 23 years) and subjects of similar occupational status (active military or university students) (for instance: Amit et al., 2007; Chan and Drasgow, 2001; Chan, Rounds and Drasgow, 2000; Gottfried et al., 2011; Hong, Catano and Liao, 2011; Krishnakumar and Hopkins, 2014). Therefore, this study will contribute to the validation of the construct by adding empirical data from other cultural and occupational backgrounds by using different subsamples. Additionally, it will explore the differences between leaders' and followers' MTL and the correlations between the MTL scale and leadership self-efficacy (Chan and Drasgow, 2001), which seems to be the closest construct to the MTL.

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Theoretical overview

Motivation to lead

Chan and Drasgow (2001) proposed a construct of general individual differences called the *motivation to lead*. They assumed that people are not naturally motivated to lead and defined it as a construct which affects the leader's (or future leader's) decision to take on the role and responsibilities of leadership. They used three samples: Singaporean military recruits (N=1594), Singaporean (N=274) college students and American (N=293) college students. Chan and Drasgow (2001) showed that MTL is a construct whose three dimensions are intercorrelated: Affective/Identity, Social-Normative and Non-Calculative MLT. The proposed construct is a context-independent individual-differences construct. Therefore, the impulse to lead is not specific to any particular domain of activity (Chan and Drasgow, 2001). The model states that people are not born with the motivation to lead. The key to this approach is that leadership skills and styles can be learnt, therefore MTL might change in the course of time. Some recent studies have found empirical support for that assumption (for instance Waldman, Galvin and Walumbwa, 2012; Stiehl, Felfe, Elprana and Gatzka, 2015). Amit et al., (2007) proposed two additional dimensions to the three-component MTL construct: patriotic and ideological. They studied an Israel military sample and found that ideological and patriotic sources of leadership motivation seem to add something valuable and relevant to the original model of MTL.

The model of MTL states that leadership motivation arises from four domains: personality traits, values, leadership self-efficacy, and previous leadership experience. Hence, the different combinations of these four elements led to the three MTL factors (AIMTL, SNMTL and NCMTL) (Chan and Drasgow, 2001) and to the additional two dimensions (PaMTL and IdMTL) (Amit et al., 2007). This assumption is based on two theories of social cognition: Fishbein and Ajzen's (1975) theory of reasoned action/theory of planned behaviour (Ajzen, 1991) and Triandis´s (1977) theory of interpersonal behaviour. These theories posit three determinants of individual´s social behaviour: 1) the valences related with an act; 2) individual beliefs about the outcomes related with success, and 3) social norms related with acts or behaviours (Chen, Gully and Eden, 2001). At the same time, the ideological and patriotic MTL are based on a slightly different assumption: Ideological MTL "lies in an individual´s belief that assuming a leadership role serves the principles of his or her ideology" which differs in that sense from SNMTL. The source of the ideology may vary, for instance social, political or religious beliefs and ideas. Patriotic MTL, in contrast, stems from a person's relations to his or her homeland. This is founded on the assumption that a person with high PaMTL does everything

for his/her homeland despite the costs that will follow or the ideology that he/she has (Amit et al., 2007). Chan and Drasgow (2001) did not assume that MTL has a direct influence on leadership effectiveness, although they suggested that MTL is a useful construct to predict leader's morale and satisfaction with the job, group characteristics (such as group cohesion) and also possible withdrawal from leadership positions. One of the practical implications of MTL pertains to the selection, training and development of leadership in organizations.

The following descriptions of MTL subscales are from Chan and Drasgow (2001) and Amit et al. (2007).

Affective/Identity MTL: People who score high on this dimension like or prefer to lead and see themselves as leaders. They tend to have more past leadership experience, they value competition and achievement, and they are confident in their own leadership abilities (having higher leadership self-efficacy). They tend to be outgoing and sociable, they are also extraverts, achievement-oriented and individualistic.

Social-Normative MLT: Individuals with high score on social-normative MTL are motivated by the sense of social duty and obligation; they also accept social hierarchies, but reject social equality. People with high social-normative MTL tend to have more leadership experience and confidence in their leadership abilities. They have strong collectivist values and conscientiousness.

Non-calculative MTL: These individuals are not calculative about leading. Usually leadership involves some responsibilities or costs, therefore people with less calculative MTL (high non-calculative) wish not to avoid leadership positions or roles. Their socio-cultural values (high in collectivistic values) and their agreeable disposition (high in agreeableness) are more important in this type of MTL. Non-calculative MTL is positively correlated with group oriented values and negatively correlated with individualistic values. In addition, leadership self-efficacy and past experience are not significantly correlated with non-calculative MTL.

Patriotic and Ideological MTL: Amit and colleagues (2007) proposed two additional sources for the motivation to lead: ideological and patriotic. Ideology was defined as "a system, a set of ideas in a certain field – political, social, literary etc." and patriotism as "a result of the love for homeland". The latter is especially relevant to organizations such as armies acting in the service of the state. The most important reason for adding this dimension to MTL was that Chan and Drasgow (2001) narrowed the influence of socio-cultural values to the scale of individualism and collectivism, which is perhaps a bit too restrictive.

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Determinants of motivation to lead

Self-regulatory focus, personality and individual values: In their literature review about motivation to lead and motivation to follow, Kark and Van Dijk (2007) put Chan's MTL model into the new framework. They hypothesized that people's self-regulatory focus (chronic and situational) is the central component shaping motivation and behaviour. They also supported Chan and Drasgow's (2001) findings that leaders' values serve strong regulatory guides and therefore affect leaders' MTL and subsequent behaviour. These assumptions are based on the theories of charismatic and transformational leadership (Bass and Riggio, 2006), the identity and self-concept-based theories of leadership (Knippenberg, Knippenberg, Cremer and Hogg, 2004) and the theory of regulatory focus (Higgins, 1998). The latest argues that people have two basic self-regulation systems: one regulates the achievement of rewards and focuses on promotion (the "*ideal self*"); the other regulates the avoidance of punishments and focuses on prevention (the "*ought self*"). The second construct which is closely related to the MTL is the system of individual values. According to Schwartz and Bilsky (1990) values 1) are concepts or beliefs; 2) pertain to desirable end states or behaviours; 3) transcend specific situations; 4) are applied as a guidance to judge and choose among alternative modes of behaviour; and 5) are ordered by relative importance. Chan and Drasgow (2001) found that people who score high on the dimension of AIMTL value competition and achievement, and individuals high on the SNMTL value social hierarchies. At the same time, Clemmons III and Fields (2011) found a positive relationship between the studied MTL and different values (e.g. self-transcendence and self-enhancement values). Other determinants of MTL are personality factors, which had correlations with all of the original MTL subscales (Chan and Drasgow, 2001).

Leadership self-efficacy and leadership experience: Popper et al. (2004) found that soldiers who had been recognized as potential leaders by their commanders had a higher level of self-efficacy, internal locus of control, attachment, and optimism; at the same time, they had a lower level of anxiety. Chan and Drasgow (2001) found that leadership self-efficacy is an important mediator between personality traits and MTL subscales; it was significantly correlated with AIMTL and SNMTL. Amit, Popper, Gal, Mamane--Levy and Lisa (2009) found evidence to support the importance of past leadership experience in the development of self-efficacy in leadership. Therefore, leadership self--efficacy has been shown to be closely related to MTL; at the same time past leadership experience contributes both to leadership self-efficacy and to MTL. These findings are fully consistent with Bandura's (1997) view of self-efficacy. As mentioned above, MTL can be learned (Chan and Drasgow, 2001), therefore the quantity and quality of lead-

ership experience are one source of leadership confidence and subsequently support leadership self-efficacy and MTL.

Thus, MTL seems to be a construct which is affected by both the stable personality traits (for instance Big-Five or self-regulatory focus) and the dynamic constructs such as leadership self-efficacy and past leadership experience.

Measurement of MTL

To measure the proposed construct, Chan and Drasgow (2001) developed a 27-item instrument with three intercorrelated subscales, using a Likert-type scale. They found that each MTL factor has its own unique sets of antecedents. Confirmatory factor analysis showed sufficient stability over the samples and better fit indices than the single-factor model. However, one of their earliest publications (Chan and Drasgow, 2000) proposed that due to the remarkable correlations between subscales (from r=.20 to r=.52) General MTL (GMTL) could be measured by using all items from the scale as a one-dimensional construct. They assumed that if all components are correlated, the second order GMTL construct has to account for the common variance among the three first-order factors.

There are examples in the literature on the adaptation of MTL instrument to several cultural contexts: Italian (Bobbio and Manganelli Rattazi, 2006), Israeli (Amit et al. (2007) and German (Felfe and Schyns, 2014). All referenced studies have indicated that the MTL scale is a valid and reliable research tool. Amit et al. (2007) expanded the earlier work of MTL and added two additional subscales: patriotic and ideological. However, the research sample of these subscales was from the Israeli Defence Forces (IDF), which has rather unique cultural and political background. Additionally, Bobbio and Manganelli Rattazi (2006) reduced the scale to 15 items, which showed a sufficient level of reliability through confirmatory factor analysis (CFA). Both, Amit et al. (2007) and Bobbio and Manganelli Rattazi (2006) concluded that the MTL scale is a useful research instrument in leadership studies.

Propositions

Chan and Drasgow (2001) reported a three-factor model of MTL measured by a 27-item scale. Chan et al. (2000) showed that this scale could be used to measure GMTL as a one--dimensional construct. K. Amit and colleagues (2007) added two subscales (ideological and patriotic) to the original MTL scale. Both were reported to be reliable and necessary

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additions to the original construct of MTL in the Israel context; however, the historical and political situation of this country has to be taken into account. This study focuses on the adaptation of the MTL scale to the Estonian context. Therefore, the most interesting questions here are the following: 1) Are the three- and five-factor MTL constructs valid in the Estonian context? 2) Are the three- and five-factor solutions of MTL scale reliable to measure General MTL as a one-factor construct? 3) Are there any differences (regarding the subsamples, past leadership experience and social-demographic variables) between the three-factor (original) and five-factor (expanded) solutions?

Consequently, our first hypothesis is: *MTL Scale has five inter-correlated subscales in the Estonian context.*

Three types of psychological capacities are important for leadership: self-confidence, proactive orientation and capacity for prosocial relationships (Popper et al., 2004). Clemmons III et al. (2011) found significant correlation between self-efficacy and MTL subscales. Thus, our second hypothesis would be: *All MTL subscales are positively and significantly correlated with leadership self-efficacy* (Chan and Drasgow, 2001).

According to the theory, MTL might change over time. People are not born with the motivation to lead; nor does an unconscious need for achievement, power and affiliation drive their MTL (Chan and Drasgow, 2001) as argued by McClelland and Boyatzis (1982). Therefore the third hypothesis would be: *Past leadership experience is positively correlated with MTL subscales.*

Method

Participants

The research was administered within the Estonian Defence Forces (EDF), Estonian Police and university students. The participants (see table 1) were divided into two groups: a group of 170 EDF service members and a group of 347 EDF service members, police officers and university students. The characteristics of the first group were the following. The age of the participants ranged from 18 to 44, the average being 24.04 (SD=4.56) years. One hundred and forty-three participants declared Estonian as their mother tongue; 12 people spoke Russian as their mother tongue; and 3 participants spoke some other language as their mother tongue. Twelve participants did not report their nationality. The service time in EDF ranged from 1.5 months to 12 years. Ninety--three participants were conscripts who had passed a basic training course (two months) at the time of participation in the survey (the conscription service in EDF is

8 or 11 months, depending on the speciality). The military rank difference of the rest of the subsample (excluding the conscripts) varied from a sergeant to a captain. The age of the participants in the second group ranged from 19 to 63, M=32.41 (SD=9.33); service time (all kinds) ranged from 0 to 30 years M=9.31 (SD=6.88); leadership experience varied from 0 to 25 years. When asked about previous leadership experience 134 participants reported none, 181 as an average M=6.41 (SD=5.06) and 32 people left the question unanswered. In terms of gender 175 participants were 175 male, 92 were female and 3 people did not report it. Three hundred and four participants spoke Estonian as their mother tongue, 17 declared to be Russians and 26 people did not answer. A majority of the participants (159) had secondary education, 181 had higher education (BA, MA or PhD) and 2 had primary education. Five people did not answer the question.

Table 1. Composition of the subsamples participating in the study

Samples	ENDC Students	Con-scripts	EDF	ENDC	Refresher course	Univer-sity students	Est Police	Total
Group 1	41	93	36	–	–	–	–	170
Group 2	76	–	–	72	59	65	75	347
Total	**117**	**93**	**36**	**72**	**59**	**65**	**75**	**517**

Note: Students – ENDC students (basic and advanced courses); EDF – officers and non-commissioned officers from EDF; ENDC – Estonian National Defence College members (military and military civilian); Refresher course – participants of ENDC refresher course; University students – BA and MA students from Tallinn University.

Instruments

MTL Scale. This self-report measure consists of 27 items measuring the three 9-item factors of MTL: Affective/Identity, Social-Normative and Non-calculative (Chan et al., 2000; Chan and Drasgow, 2001). In addition, we included two separate subscales: the patriotic (4 items) and ideological (4 items) subscales proposed by Amit et al. (2007). All items were translated from English into Estonian by four people (two English philologists, one officer and one student from ENDC). All translations were compared to each other in order to find the most understandable items, followed by a small-scale pilot study among the ENDC cadets (N=12). The items with the most understandable wording were selected and integrated into the final questionnaire. The final set of items was back-translated into English to compare them with the original items.

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The instruction for the MTL scale was the following: *"Please imagine a typical work or school situation where you work in a group or team, and the question is raised if someone should be appointed a group leader. Assume that everyone in the group has approximately the same level of training, knowledge and experience for the job or task. Please read each statement carefully and choose one answer that best describes your agreement or disagreement using a (Likert type) scale from 1 – strongly disagree to 5 – strongly agree".* Therefore, the instructions did not specify the current work/service situation, but asked respondents to assess the items from a general perspective. These are examples of the subscale items: *"I usually want to be the leader in the groups that I work in"* (AMTL), *"I would only agree to be a group leader if I know I can benefit from that role"* (NCMTL), *"It is not right to decline leadership roles"* (SNMTL), *"If I want to lead, it is mainly out of desire to help my country"* (PMTL), *"I want to lead in order to convince others of my beliefs"* (IMTL).

Leadership self-efficacy. Leadership self-efficacy (LSE) was measured by using a six-item scale developed by Feasel (1995; in Chan and Drasgow, 2001) and modified by Chan and Drasgow (2001). The translation process was the same as described above. Respondents used a Likert-type scale from 1 – *strongly disagree* to 7 – *strongly agree*. The sample item is: *"I believe that leading others effectively is a skill that I can master"*. The factor analysis (sample 1: N = 170) showed a one-factor solution: 52.6% of variance, loadings between |.46| and |.83|), the average inter-item correlation was .52 (.27-.70) and correlation between second and first half was .80, the reliability of split half was .89, *Gutman´s* index .89. *Cronbach α* has varied previously from .76 to .83 (Chan and Drasgow, 2001). Negative items tended to form a separate component; however, the reliability figures were strong enough to support the decision to use a one-component solution for the following analysis: N=517 loadings between .55 and 76, *Cronbach α* .76, M=4.74 (SD=1.03), average r=.34, Guttman split half coefficient .77.

Past leadership experience and socio-demographic data. I*n addition* to MTL and LSE, several socio-demographic questions were asked about gender, age, mother tongue, the length of service and education. These questions were located at the end of the questionnaire in order to avoid bias.

Procedure

The questionnaire was administered in two ways. In one, it was administered to respondents in an auditorium (refreshment course and conscripts). The author briefed the participants on the procedure; they received the booklets of the questionnaire and had an hour to complete them. In the other, the author briefed participants on the proce-

dure and gave them the booklets, which the participants filled in at their convenience and returned within a week. Both procedures were anonymous and voluntary. The response rate for the first administration method was 96.7% (5 of 152 returned blank booklets). For the second administration the method response rate was 66.67% (555 questionnaires were distributed of which 370 were useable for statistical analysis).

Data Analysis

The first task was to repeat the results reported by the authors of the model (Chan and Drasgow, 2001; Amit et al., 2007) in the Estonian context. To achieve this, we used two separate samples as proposed by DeVellis (2003) (see Table 1). Exploratory factor analyses (EFA) (N=170) were conducted to find the item solution for the confirmatory factor analysis (N=347). As noted in the literature, the results of CFA can remarkably increase the confidence in the structure and psychometric properties of the measure (Noar, 2003). Therefore, EFA was used 1) to confirm the three latent factors solution as proposed by Chan and Drasgow (2001), and 2) to confirm the five- factor solution proposed by Amit et al. (2007), followed by CFA to confirm the results as a fit of model obtained from EFA three- and five-factor solutions.

The assumptions underlying both techniques need consideration. Firstly, there is a question of sample size. Tabachnick and Fidell (2007) have proposed that the sample size of 300 cases is a rule of thumb for EFA; however, 150 cases can suffice when there are several high-loading marker variables (>.80). DeVellis (2003) noted that the sample size below 200 for EFA should not contain more than 40 items. Therefore, we concluded that N=170 was good enough to conduct EFA. Sample size in CFA has also been discussed in the literature. Despite the opinion of some researchers that a large sample size is preferable, there is no consensus in academic literature; however, according to Brown (2006) a sample size around 200 should be enough to obtain reliable results. Moreover, Klein (2011) argues that the sample size around 200 is common and a sample over 300 might be considered a large sample. Screiber, Nora, Stage, Barlow and King (2006) proposed that 10 cases per estimated parameter should be enough to yield stable results. In our study, we have used 35 items (maximum), thus the ratio between the participants and variables was approximately 10:1, which is sufficient according to the recommendations of Tabachnick and Fidell (2007) and Kline (2011).

CFA was then conducted using the covariance matrix via Diagonally Weighted Least Squares (DWLS) method of estimation. This method was used, as it is suitable for the categorical items and does not assume a strong multivariate normality of the data (Klein, 2011). The DWLS is a simpler form of the weighted least squares (WLS) method,

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and it is better than WLS, because the sample size is not very large (Kline, 2011). We determined the fit of variables for the DWLS by analysing skewness and kurtosis values for each variable. Kline (2011) proposes that for each item, kurtosis values should be less than 10 and skewness values less than 3 (both in absolute values). The skewness of the variables of the current study (N=347) lay between -.008 (item 3) and .959 (item 18). The kurtosis was between -.006 (item 17) and -.886 (item 8).

The CFA analysis that was conducted had the following aims: 1) to control the five (27 items) and three (35 items) factor structure of MTL; 2) to confirm the results of EFA in the current study in order to get additional information about the validity of the model; and 3) in the case of the differences between EFA and CFA, to identify the core set of items which measure the designated dimension of MTL. Therefore we were seeking the pattern of item loadings which would satisfy the statistical criteria and have a meaningful explanation. As a first step, we performed CFA using 27 items, followed by the careful examination of the proposed modification indices. The second step was to analyse the structure of 35 items of the five- component solution following the same steps.

The goodness of the fit of the models was evaluated using the following indices: χ^2 and the ratio between χ^2 and *df* (degrees of freedom), RMSEA, CFI, SRMR, GFI and NNFI. Klein (2011) proposes that the first four have to be presented in each report using CFA. The first index (χ^2) is strongly influenced by the number of cases and always has to be significant (Tabachnick and Fidell, 2007). The sensitiveness of sample size means that χ^2 statistic nearly always rejects the model for a large sample size (Jöreskog and Sörbom, 1993). Therefore, the ratio between χ^2 and *df* was used. Tabachnick and Fidell (2007) recommended that χ^2/df should be less than 2 as the "rule of thumb" for a good-fitting model; however Schreiber *et al.,* (2006) suggest that a ratio between 2 and 3 indicates a good fit.

RMSEA (Root of Mean Square Error of Approximation) is the most widely used assessment of misfit/fit in the application of SEM (included CFA) and it measures how well the model fits the population covariance matrix (Byrne, 1998). Kelley and Lai's review of the literature (2011) concluded that RMSEA ≤ .05 refers to close, ≤ .08 mediocre, and > .10 poor fit. Additionally, LISREL provides a confidence interval around its value, the well-fitting model should have a lower limit close to the 0 and the upper limit < .08 (Hooper, Coughlan and Mullen, 2008). The next index used for the model evaluation was CFI (Comparative Fit Index), which is the indicator to show the fit between the basic and hypothesized model. This index is independent of sample size and is therefore suitable to use in the current study, ranging from 0 to 1. However, the values ≥ .95 indicate a good fit of the evaluated model (Schreiber et al., 2006).

SRMR (Standardized Root Mean Square of Residual) is used if the variance-covariance matrix is analysed, Hu and Bentler (1999) recommended that values less than .08 are acceptable. However, Schreiber et al. (2006) referred that this cut-off value is not achievable for categorical data. GFI (General Fit Index) was created by Jöreskog and Sorbom and it calculates the proportion of the variance that is accounted for by estimated population covariance. The traditional cut-off point is ≥ .90; however, recent recommendations suggest that ≥ .95 is more appropriate (Schreiber et al., 2006). The NFI is developed from Normed Fit Index (NFI) in order to avoid the problem of underestimation of the samples under 200. Thus, NNFI assesses the model by comparing the χ^2 value of the model and χ^2 value of the null model (Hooper et al., 2008). The cut-off point for NNFI is ≥ .95, even though its range might go over 1 (Hu and Bentler, 1999).

The analyses were conducted using SPSS 17 and LISREL 8.80 (for CFA) (Jöreskog and Sobrom, 2006). A listwise deletion strategy was used for missing data throughout the CFA analysis.

Results

The structure of the MTL three- and five-factor models

The first task of the current research was to investigate the structure of MTL (3-component solution, 27 items) in the Estonian context. As a first step, a series of EFA analyses were conducted (N=170) using the principal component method with the direct oblimin rotation (used because statistically significant correlations between MTL subscales were assumed; a similar approach was used by Bobbio and Manganelli Rattazz, 2006). The eigenvalue criteria (EGNV > 1) gave the structure of six (6) components (pairwise deletion of missing data). The Kaiser-Meyer-Olkin statistic was .83, which indicates a sufficient sampling adequacy to use FA for this data, and shows that Bartlett´s test of sphericity was statistically significant (p<.000) (Morgan, Leech, Gloeckner and Barrett, 2012). The total variance of the description for this solution was 59.1%, the lowest communality .47. However, the scree plot indicated that there were three dominating components (EGNV > 2). Both, the NCMTL and SNMTL items tended to load into two separate components. Items 11 and 16 formed the fourth component, items 23 and 26 formed the fifth, and the sixth component consisted of items 6, 14, 19 and 21. Forcing the number of the components down to three, the solution explained 45.1% of the variances (initial EGNVs of the components: 7.02; 3.07; 2.08, explained respectively 26.0, 11.4 and 7.7%).

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Factor analyses were made using different extraction and rotation strategies; however, the results were comparable despite the rotation and the extraction method used. Some items (9, 16, 23 and 26) showed low communalities (less than .30) and were excluded from the subsequent analysis (Fabrigar, MacCallum, Wegener and Strahan, 1999). In addition, items 4, 17, 19 and 21 cross loaded into more than one component, so these items were excluded from analysis. However, the final three (19 items) component model described 52.3% of the variance of the data and it had 7 items on the AIMTL and NCMTL, and 5 items on the SNMTL subscale. All items had significant correlations to the components they loaded into: AIMTL r = .49 - .81; NCMTL r = .52 - .78; SNMTL r = .62 - .73.

The next step was to confirm these results by the CFA DWLS estimation procedure. First, we analysed 19 items (N=347) and three latent factor solution which was presented by EFA. The results (see table 2) indicated a rather poor model fit, having the following indices: $\chi^2(149)=558.4$, p=.000, $\chi^2/df=3.75$, RMSEA=.089 (.081-.097, p=.000), GFI=.91, CFI=.90, NNFI=.89 and SRMR=.11. The ratio of χ^2/df ratio and RMSEA were over the acceptable level, the rest of the indices showed a moderate model fit. SRMR was not acceptable; however, for categorical data the cutoff value <.80 would be hardly achievable as discussed above. Due to the previous results, the next step included CFA starting from all MTL items (27), trying to identify problematic items using error terms and factor loadings. The first model to be tested was the one-factor model with 27 items, which showed totally unacceptable indices. However, the three-factor model with 27 items showed comparable fit indices as a model after the EFA analysis (19 items). Nevertheless, some item loadings to the factors were relatively low. The next step was to identify the solution which had an acceptable level of model fit looking carefully at the factor loadings (cutoff >.50), the model fit and modification indices proposed by LISREL. Finally, the best model fit showed the three- factor solution with 6 items each (items 4, 5, 8, 11, 16, 18, 23, 26 and 27 were excluded). The model fit indices were the following: $\chi^2(132)=304.80$, p=.000, $\chi^2/df=2.31$, RMSEA=.062 (.053-.071, p=.019), GFI=.94, CFI=.96, NNFI=.95 & SRMR=.099. All loadings to the factors were > .50.

The next step was to investigate the 35-item structure of MTL, including the ideological and patriotic subscales proposed by Amit et al. (2007). As with the previous analyses, EFA (N=170) was conducted using the principal component method with the direct oblimin rotation. The eigenvalue criteria (EGNV > 1) gave the structure of six (9) components (pairwise deletion of missing data). The Kaiser-Meyer-Olkin statistic was .82, which indicates a sufficient sampling adequacy to use FA for this data, and that Bartlett´s test of sphericity was statistically significant (p<.000) (Morgan, Leech, Gloeckner

and Barrett, 2012). The total variance of the description for this solution was 64.5%, the lowest communality .49. The pattern of the item loadings showed similarities with previous analysis. Both the NCMTL and SNMTL items tended to load into two separate components and items 11 and 16; 23 and 26; 14 and 6 tended to form separate components. The five- component solution explained 50.8% of variances; nevertheless, it was 5% more than the three- component solution had explained previously. As one of the research tasks was to study how much IdMTL and PaMTL contribute to the general MTL construct, a 19-item solution from the previous EFA analysis was applied together with the new subscales. The results showed acceptable loadings into the expected component > .45. So, the final five (27 items)-component model described 56.4% of the variance of the data and it had 7 items on AIMTL and NCMTL, 5 items on SNMTL, and 4 items on PaMTL and IdMTL subscales. This result had a similar item composition as the 3-component solution; the only difference was that by adding two additional subscales, the percentage of the variance of the model rose by about 5%.

The next step was to confirm the results from EFA using CFA (N=347). The results are presented in table 2; however, the model showed rather sufficient good-fit indices: $\chi^2(314, N=347) = 1356.46$, $p < .000$, $\chi^2/df=4.32$, RMSEA=.069 (.064-.075, p=.000), GFI=.91, CFI=.91, NNFI=.90 and SRMR=.095. In contrast, the one-factor model (35 items) showed totally unfit indices (see table 2). However, the five-factor model using 35 items showed almost sufficient fit indices, but CFI, GFI and NNFI respectively .88, .90 and .89 were below the cutoff points. So, the next step was to analyse the item solution from the previous CFA (18 items), adding two additional subscales (together 8 items). As it was already obvious from EFA, item 31 ("*If I want to lead, it is mainly out of desire to help my country* (reverse coded)" showed almost zero (r=-.03) correlation with an expected subscale; therefore, it was excluded from the subsequent analyses as well. The final model consisted of 25 items (AIMTL 6, NCMTL 6, SNMTL 6, IdMTL 4 and PaMTL 3): χ^2 (265, N=347) =534.95, p=.000, χ^2/df=2.02, RMSEA=.054 (.048-.061, p=.14), GFI=.93, CFI=.95, NNFI=.95 and SRMR=.089. All loadings to the factors were above the cut off value ($r^2 \leq .20$) proposed by Hooper *et al.* (2008). It is important to note, that this model showed remarkably better fit indices than the model which was finalized by the results of the exploratory FA (see table 2), especially the statistics such as RMSEA and SRMR. This indicates that the final model (25 items) fits better to the perfect one and it has better average difference between sample variance and covariance compared to the same figures of the estimated population (Tabachnick and Fidell, 2007).

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Table 2. Goodness of Fit Indices (Confirmatory Factor Analysis, N=347)

	χ^2	df	χ^2/df	p	RMSEA		CFI	GFI	SRMR	NNFI
					Value	Confidence Interval*				
Three-factor model 19 items**	558.4	149	3.75	.000	.089	.081-.097 (p=.000***)	.90	.91	.11	.89
One-factor model 27 items	2152.26	324	6.64	.000	.130	.12-.13 (p=.000)	.74	.82	.13	.71
Three-factor model 27 items	1060.41	321	3.30	.000	.080	.076-.082 (p=.000)	.89	.89	.11	.88
Three-factor model 18 items****	304.80	132	2.31	.000	.062	.053-.071 (p=.019)	.96	.94	.099	.95
Five-factor model 27 items**	1356.46	314	4.32	.000	.069	.064-.075 (p=.000)	.91	.91	.095	.90
One-factor model 35 items	3499.23	560	6.25	.000	.120	.12-.13 (p=.000)	.67	.76	.14	.64
Five-factor model 35 items	1437.06	550	2.61	.000	.068	.064-.073 (p=.000)	.90	.88	.099	.89
Five-factor model 25 items*****	534.95	265	2.02	.000	.054	.048-.061 (p=.14)	.95	.93	.089	.95
Three-factor hierarchical model 18 items****	304.80	132	2.31	.000	.062	.052-.071 (p=.019)	.96	.94	.099	.95
Five-factor hierarchical model 27 items******	803.59	315	2.55	.000	.067	.061-.073 (p=.000)	.93	.90	.10	.92

Note: The models with two or more factors assumed inter-correlation between them. * - 90 Percent Confidence Interval for RMSEA. ** – model proposed by EFA (items 4, 9, 16, 17, 19, 21, 23 & 26 are excluded). *** – p – value for Test of Close Fit (RMSEA < .05). **** – the items 4, 5, 8, 11, 16, 18, 23, 26 & 27 are excluded. ***** – the items 4, 5, 8, 11, 16, 18, 23, 26, 27 & 31 are excluded. ****** – the items 8, 11, 12, 16, 23, 26, 27 and 31 are excluded.

In addition to the three and five-factor solution, general MTL (GMTL) was assessed as it was assumed by Chan and Drasgow (2000). It was done through the hierarchical CFA modelling (see results from table 2). The three-factor (18 items) solution worked well, so the fit indices refer to the generalizability of the construct. Nevertheless, the five-factor solution (25 items) resulted in a specification error, but the model with 27 items showed almost sufficient fit indices. Therefore, the results indicated that the five-factor solution is not applicable to measure general MTL without the careful examination of possible problematic areas in model specification.

The reliability of MTL subscales

Cronbach´s alfa (α) was calculated as a statistic to describe the internal reliability of MTL subscales. The results are presented in table 3, illustrated by the findings from the selected previous studies. The reliability index is presented for both the original bulk of items and for the modified subscales as a result of CFA.

Table 3. Reliability of the MTL Subscales (N=517)

MTL factor	Items in factor	α in the study	Inter item correlation	Cronbach α reported in literature				
				Chan et al., 2001	Amit et al., 2007	Bobio et al., 2006	Clemmons III et al., 2011	Hong et al., 2011
AIMTL	6 (9)*	.80 (.83)	.40 (.36)	.84-.91	.89	.82	.78	.88
SNMTL	6 (9)	.77 (.77)	.35 (.27)	.80-.84	.78	.60	.82	.81
NCMTL	6 (9)	.75 (.77)	.34 (.27)	.65-.75	.82	.75	.82	.75
PaMTL	3 (4)	.74 (.71)	.48 (.38)	–	.83	–	–	–
IdMTL	4 (4)	.65 (.65)	.32 (.32)	–	.69	–	–	–

Note: * In brackets, there are the figures for original subscales before the CFA results.

The results showed that the reliability of the subscales was comparable with the findings reported previously in literature (Amit et al., 2007; Bobbio and Manganelli Rattazzi, 2006; Chan and Drasgow, 2001; Clemmons III et al., 2011 and Hong et al., 2011). Due to the modification in some cases *Cronbach α* slightly dropped, but still remained at the acceptable level (α > .65 – minimally acceptable; α > .70 – respectable; α > .80 – very good (DeVellis, 2003)). On the other hand, the average inter item correlation raised. Table 4 presents subsamples´ reliability coefficients of the subscales. The basic tendency remains the same as for the whole sample; however, some *Cronbach α* were remarkably weak,

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especially PaMTL and IdMTL for the subsamples outside the military domain. It may indicate that these components of MTL are more suitable to apply to the military (including military civilians) and they are not so relevant to other populations.

Table 4. Subsamples´ MTL Subscales reliability coefficients

Samples	ENDC Students N=117	Conscripts N=93	EDF N=36	ENDC N=72	Refresher course N=59	University students N=65	Est Police N=75
AIMTL	.74 (.81)*	.78 (.80)	.75 (.79)	.84 (.87)	.85 (.86)	.77 (.79)	.73 (.74)
NCMTL	.80 (.81)	.70 (.78)	.63 (.70)	.74 (.78)	.78 (.77)	.68 (.69)	.66 (.66)
SNMTL	.71 (.67)	.82 (.72)	.80 (.79)	.83 (.85)	.78 (.77)	.72 (.74)	.69 (.70)
PaMTL	.80 (.70)	.75 (.80)	.73 (.78)	.81 (.64)	.63 (.47)	.37 (.31)	.45 (.42)
IdMTL	.72	.66	.75	.76	.68	.32	.48
LSE	.84	.76	.61	.77	.89	.81	.62

Note: * In brackets, there are the figures for original subscales before the CFA results.

The correlations between MTL subscales and leadership self-efficacy

Another necessary analysis concerns the correlations between MTL subscales and between MTL and leadership self-efficacy (see table 4). First of all, the correlations between the original and modified subscales were remarkably high from r=.94 to r=1.0 (AIMTL r=.95; NCMTL r=.95; SNMTL r=.95; IdMTL=1.0; PaMTL r=.94), it showed that despite the item reduction (for instance AIMTL, NCMTL and SNMTL from 9 to 6 items) the subscales bore the core capacity to measure the designated dimensions of the MTL. Thus, the pattern of the correlations remained comparable. A strong correlation between AIMTL and SNMTL (r=.58) appeared. As a comparison, Amit et al. (2007) found r=.68 and Chan and Drasgow (2001) found (r=.40 – .50).

The second considerable correlation was a negative relation between NCMTL and IdMTL (r=-.15). It is interpreted as a tendency for calculative individuals (thinking about benefits and costs of leadership) to be motivated by ideological aspects (Amit et al., (2007) found the same tendency).

Third, SNMTL seemed significantly correlated with PaMTL (r=.39) and IdMTL (r=.27). These correlations were not as remarkable as they were in the Israel military sample

(Amit et al. (2007); however, the results showed that ideological and patriotic motivation are closely related to the social expectancies of the society (which is more common in different cultures, such as Israel).

Table 5. Correlations (Pearson) and descriptive statistics between subscales and LSE* (N=517)

MTL factor	Mean	SD	AIMTL	SNMTL	NCMTL	PaMTL	IdMTL	LSE
AIMTL**	3.23	.72	–					
SNMTL	3.39	.70	.58 (.54)	-				
NCMTL	3.51	.66	.21 (.28)	.24 (.23)	–			
PaMTL	2.78	.83	.20 (.20)	.39 (.41)	-.00 (-.08)***	–		
IdMTL	2.73	.72	.20 (.17)	.27 (.30)	-.15 (-.12)	.34 (.35)	-	
LSE	4.78	1.07	.66 (.68)	.51 (.46)	.27 (.20)	.13 (.14)	.08 (.08)***	–

Note: * – LSE – Leadership Self-efficacy (it was measured by 1-7 point Likert type scale). ** – Modified subscales proposed by the results of CFA, the correlations for the original subscales are in brackets. *** – the correlations are not statistically significant at the $p \leq .01$ level.

The final significant findings showed very weak correlations between the modified NCMTL and AIMTL and SNMTL. It indicates that individuals with a high affective MTL and SNMTL are not influenced by the non-calculative MTL factor. Therefore, their calculations about the costs and benefits of assuming a leadership role are probably not related to other dimensions of MTL; hence, the source of the calculation has to be something besides MTL.

The second hypothesis states, that all MTL subscales are positively correlated with leadership self-efficacy. The results are presented in table 5. A strong correlation between AIMTL and LSE was found (r=.66) and SNMTL and LSE (r=.51). Other dimensions did not show significant correlations with leadership self-efficacy. The reason might be that an individual's belief about his or her ability to be a successful leader is a strong mediator in the motivation to take leadership positions. Generally, these correlations are consistent with the findings reported by the authors of the MTL model (Chan and Drasgow, 2001). The new subscales (PaMTL and IdMTL) were poorly correlated with the factors from the original study, except the social-normative subscale (r=.39 and .27).

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Difference between leaders and non-leaders males and females

Different subsamples gave the opportunity to compare the results among the groups. Descriptive statistics are shown in Table 6. The analysis of the variances (ANOVA) demonstrated that the mean differences among the subsamples are statistically significant: AIMTL (F(6; 502)=13.16, p= 000), SNMTL (F(6; 502)=14.26, p=000), NCMTL (F(6; 505)=11.00 p=000), IdMTL (F(2; 502)=4.81, p=.000), PaMTL (F(2; 503)=14.90 p=000) and LSE (F(6; 502)=17.07, p=000). Post Hoc Tests (*Bonferroni*) showed the similarities of the mean pattern between ENDC students and officers and non-commissioned officers from EDF (the highest means of MTL subscales and leadership self-efficacy). This result is consistent with the findings of Amit et al. (2007) and Chan and Drasgow (2001) which means that subsamples with higher leadership self-efficacy also have the higher results on the affective and socio-normative motivation to lead.

Table 6. Means and Standard Deviations for subsamples participated in the study (N=517, modified subscales)

Samples	ENDC Students N=117	Conscripts N=93	EDF N=36	ENDC N=72	Refresher course N=59	University students N=65	Est Police N=75
AIMTL	3.53 (.59)*	2.97 (.72)	3.57 (.58)	3.01 (.72)	2.83 (.71)	3.40 (.69)	3.29 (.70)
NCMTL	3.59 (.63)	3.51 (.64)	3.67 (.52)	3.73 (.69)	3.58 (.64)	3.57 (.59)	3.00 (.60)
SNMTL	3.81 (.53)	3.31 (.78)	3.64 (.65)	3.04 (.67)	3.25 (.61)	3.35 (.63)	3.20 (.68)
PaMTL	3.12 (.85)	2.53 (.84)	3.31 (.75)	2.72 (.88)	2.79 (.63)	2.18 (.58)	2.89 (.68)
IdMTL	2.90 (.75)	2.74 (.81)	2.76 (.76)	2.50 (.71)	2.55 (.64)	2.58 (.56)	2.96 (.62)
LSE	5.38 (.91)	4.38 (1.0)	5.27 (.69)	4.51 (.94)	4.20 (1.25)	5.09 (.98)	4.58 (.97)

Note: * – SDs in brackets.

The next step was to compare the groups (N=449 participants publicized this information) having previous leadership experience (N=242) with the group not having such experience (N=207). The results were the following. Individuals who have reported at least some leadership experience had statistically significantly ($p < .01$) higher means on AIMTL (F(1; 439)=30.66, p=000, means respectively 3.41 (SD=.68) and 3.05 (SD=.70)), SNMTL (F(1; 441)=7.34, p=007, means respectively 3.47 (SD=.65) and 3.29 (SD=.72)) and LSE (F(1; 441)=34.98, p=.000, means respectively 5.04 (SD=.93) and 4.47 (SD=1.10)) subscales. Male respondents (N=391) had statistically significantly higher results than female respondents (N=122) on AIMTL (F(1; 503)=8.17, p=.004, means respectively

3.28 (SD=.69) and 3.07 (SD=.82)); SNMTL ($F(1; 503)=24.72$, p=.000, means respectively 3.48 (SD=.68) and 3.13 (SD=.70)); PaMTL ($F(1; 503)=8.17$, p=000, means respectively 2.87 (SD=.82) and 2.50 (SD=.81)) and LSE ($F(1; 503)=10.04$, p=.002, means respectively 4.86 (SD=1.06) and 4.51 (SD=1.07)) subscales. Therefore, male respondents tend to possess higher indicators of MTL and LSE than female respondents.

Discussion

This study set out to adapt the MTL instrument developed by Chan and Drasgow (2001) into the Estonian military context and to confirm the relevance of the expanded version (Amit et al., 2007) of the construct. The results showed that both versions have sufficient reliability and validity to be used as research tools in the leadership domain. The findings also introduced the possibility to use fewer items than the original instrument, which would be easier to administer. The shorter scale is especially suitable for use in research (DeVellis, 2003); however, it means that it has slightly lower reliability scores. It is interesting to note that the items of the subscales which were reversely worded (differed from the bulk of items) seemed to be more problematic than the items worded vice versa. In his discussion of the negatively coded items, DeVellis (2003) concluded, that the benefits of those items usually do not outweigh the disadvantages. However, two additional factors proposed by Amit et al. (2007) seemed to bring something valuable to the original MTL, because the picture of the factor loadings was clearer. As with the results from the research mentioned above, SNMTL and NCMTL subscales (especially) were also influenced by that. So, to improve the instrument, the first step would be to examine the reversely coded items.

In order to compare the results with the Israeli military (PaMTL and IdMTL subscales), we need to bear in mind Israel's unique historical and political context. Therefore, these two additional components, still weakly correlated with others, cannot be applied to other countries without careful examination. Thus, we argue that these results indicate that organisational and contextual variables influence the motivation to lead. It could explain why Bobbio and Manganelli Rattazzi (2006) found the model acceptable in the Italian context. They also reported a moderate correlation between MTL and the social desirability scale; thus, we think that these findings should be taken into consideration, with special attention to the samples where a leadership role is more desirable (such as military). The comparison of the subgroups in our study also supports this argument. However, in general, the model fit indices were acceptable (for instance χ^2 always significant and SRMR > .80) and not close to perfect. Moreover, the reliability (Cronbach α between .65 and .80) of all subscales was not very high. Streiner

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(2003) summarised that .70 is suitable for the early stage of the research. The sample of the current research was multifarious, including the subsets from different organisations, positions and age groups. Despite that, the size of these groups did not allow the application of CFA to each of them separately; therefore, there is a need for further research to obtain additional information of the full validity of the MTL concept and its instrument outside the usual samples (university students and military) in the Estonian context.

It is also interesting to note that the two additional subscales (IdMTL and PaMTL) seemed to work better in the military context and their reliability outside of that was very weak. This result supports the idea that the MTL construct is a useful tool to be applied as a universal; however there might be some additional motivational aspects (which are context-dependent) to take the leadership role. In addition, shaping the instrument of the patriotic MTL more reliably requires the generation of additional items.

The second hypothesis examined the relationship between MTL subscales and leadership self-efficacy. The results showed strong relationships between the mentioned construct, AIMTL and SNMTL, and rather weak relations with the rest of the subscales. This correlation pattern gives an additional argument to allege the validity of the MTL instrument. The third hypothesis expected differences in MTL between the respondents having previous leadership experience and those not having such experience. The differences were found in AIMTL, SNMTL and LSE, in variables which mostly characterise the emerged leadership.

In conclusion, the MTL scale is a suitable and internally reliable instrument for use in the Estonian context. Nonetheless, the construct needs more careful examination in order to find and confirm the borders of the concept and the limitations of the motivation to lead. The next step in MTL research would be to measure MTL before and after the training or program of military education (also proposed by Chan and Drasgow, 2001) in order to gain broader information about the process of leaders' (including MTL) development during training and/or study. Secondly, it would help to use samples from different work contexts to confirm the generalisability of the construct.

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Annex 1. Descriptive statistics of final MTL 5 factor 25 items scale (N=517)[2]

Item	Mean	SD
Affective/Identity MTL		
1. I am definitely not a leader by nature. (R)	3.51	1.09
2. Most of the time, I prefer being a leader than a follower when working in a group.	3.28	1.09
3. I have a tendency to take charge in most groups or teams that I work in.	2.90	1.01
4. I am the type of person who is not interested to lead others. (R)*	3.69	1.00
5. I believe I can contribute more to a group if I am a follower rather than a leader. (R)*	3.12	1.04
6. I am the type of person who likes to be in charge of others.	3.05	1.04
7. I usually want to be the leader in the groups that I work in.	3.24	.97
8. I am the type who would actively support a leader but prefers not to be appointed as leader. (R)*	2.87	1.04
9. I am seldom reluctant to be the leader of a group.	3.37	1.05
Non-calculative MTL		
10. I would only agree to be a group leader if I know I can benefit from that role. (R)	3.56	.96
11. If I agree to lead a group I would never expect any advantages of special benefits.*	3.16	.95
12. I would want to know what's in it for me if I am going to agree to lead a group. (R)	3.01	1.08
13. I am only interested to lead a group if there are clear advantages for me. (R)	3.55	.93
14. I have more of my own problems to worry about than to be concerned about the rest of the group. (R)	3.65	.98
15. I will never agree to lead if I cannot see any benefits from accepting that role. (R)	3.83	.91
16. I never expect to get more privileges if I agree to lead a group.*	3.19	1.02

[2] Items in Estonian language are available from author (Antek Kasemaa: antek.kasemaa@mil.ee).

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17. I would agree to lead others even if there are no special rewards or benefits with that role.	3.55	.96
18. Leading others is a waste of ones personal time and effort. (R)*	4.02	.98
Socio-normative MTL		
19. I have been taught that I should always volunteer to lead others if I can.	2.72	1.03
20. I feel that I have a duty to lead others if I am asked.	3.87	.99
21. I was taught in the value of leading others.	3.61	1.03
22. It is not right to decline leadership roles.	3.17	1.09
23. I would never agree to lead just because others voted for me. (R)*		
24. It is an honour and privilege to be asked to lead.	3.71	.98
25. I agree to lead whenever I am asked or nominated by the other members.	3.27	1.06
26. People should volunteer to lead rather than wait for others to ask or vote for them.*	3.09	.99
27. It is appropriate for people to accept leadership roles or positions when they are asked.*	3.08	1.02
Ideological MTL		
28. I would like to be a leader only if I could pass on my opinions and beliefs to my followers.	3.05	.97
29. I want to lead in order to convince others of my beliefs.	3.08	1.05
33. If I wanted to lead, it would be mainly for the leader's privilege of keeping his/her own opinions and beliefs.	2.50	1.00
35. I want to lead in order to influence others and show them that my ideology is the right one.	2.30	1.08
Patriotic MTL		
30. If I have an interest in leading others, it stems mainly from feelings of caring for my homeland.	2.88	1.01
31. If I want to lead, it is mainly out of desire to help my country. (R)*	3.13	1.12
32. Patriotic values would play a major part in my decision whether to lead or not.	2.68	1.02
34. A key element of my education was to lead and contribute to my country.	2.77	1.06

Note: The same item numbers has been used during the entire article. R – Reversely coded. * – items were excluded from final solutions (3-factor & 5-factor) as a result of CFA.