8 Results

The results are reported beginning with the analysis of the instruments used. Descriptive statistics of transformational leadership and commitment are described. Further analysis, specific profiles for leadership and commitment relation pattern for the different context characteristics as, e.g. size of organizations, are shown. Relation patterns for demographic characteristics as age and organization tenure are presented. To test the differences t-tests for mean comparison analysis are calculated. Regression analysis to determine predictors of affective and continuance commitment are also reported.

8.1 Empirical Analysis of the instruments

For structural purposes, in this section, first former results, factor analyses, and descriptive statistics of transformational leadership, and in conclusion for commitment are presented.

8.1.1 Transformational leadership

8.1.1.1 Former results

Molero (1994) has validated the Spanish version of the MLQ (Multifactor Leadership Questionnaire) through three pilot studies. The third, and most relevant to this investigation, is based on Bass and Avolio´s version (1990) that varies from previous one in that it incorporates a new factor in transformational leadership: INSPIRATION. This factor arises from the great grouping that some items presented in the previous factor of CHARISMA. The sample of Molero's (1994) third pilot study is made up of 12 leaders and 124 subordinates. The studies of factorial analysis by the principal component and the varimax rotation in Spanish samples identified six factors (see Tab. 4)

Tab. 4: Explained Variance of the MLQ factors (Molero, 1994)

Factor	Variance	Alpha	Representative Item
Charisma	29.4%	.96	"Me pone en condiciones de pensar sobre viejos problemas de forma nueva" [He/she makes me think about old problems in a new way], "Me siento orgulloso de trabajar con él/ella"[I feel proud of working with him/her]
Individualized Consideration	8%	.81	"Ayuda mucho a los recién llegados" [Helps the newly arrived a lot]
Contingent Reward I (re-enforcing leadership)	4.4%	.84	"Me elogia cuando hago bien mi trabajo" [Praises me when I do a good job].
Management by exception (passive)	4%	.75	"Evita intervenir, excepto cuando no se consiguen los objetivos" [Avoids intervening except when objectives are not reached].
Laissez-faire (-)	3.3%	.68	"Es probable que esté ausente cuando se le necesita" [It's probable that he's/she's absent when needed].
Contingent Reward II (negotiating leader)	2.9%	.60	"Me hace saber que puedo lograr lo que quiera si trabajo conforme a lo pactado con él/ella" [Makes me feel that I can achieve what I want if I work according to what is agreed].

According to Molero (1994), the results of his studies confirm the factorial structure of Bass. He also mentions that in his leaders sample the likeness is complete. The factors coincide one by one with those of Bass and they even predict the posterior division Bass makes between charisma and inspiration. In the subordinates sample the division between transformational and transactional factors is maintained (see Tab. 4). Nevertheless, the factor CHARISMA tends to include other transformational factors, namely the factor INSPIRATION. The factor CONTINGENT REWARD seems to distinguish between two dimensions: one applied by a re-enforcing leader and one applied by a negotiating leader. In Bass´ studies, this difference is not apparent. Factor MANAGEMENT BY EXCEPTION seems to reflect a direction by exception passive (the leader lets things be and only acts when the violation of the norms is dangerous for the team). This form of direction does not seem to have a negative effect on subordinates' satisfaction as the active form reported by Molero (1994). The last factor is LAISSEZ-FAIRE, its items are grouped with negative factorial loadings. In order to respect this meaning, the author has inverted the grading of the items that compose the factor. One has to assume that leaders with a high mark

in this factor show directive behaviors. The name of the original factor, laissez faire, was maintained in order to avoid any confusion though a negative sign was added. As can be appreciated, the new factor (inspiration) introduced by Bass in the questionnaire is not manifested in a separate manner (see Tab. 4).

The author mentions that the results of his leaders sample, like the subjects used by Bass, seem to contain a more detailed vision of transformational leadership. In the subordinates sample charisma, inspiration, consideration and the intellectual stimulation are perceived in a grouped manner. Nevertheless, they are better at discriminating the factor contingent reward that is subdivided into re-enforcing leader and in negotiating leader, in words of Molero (1994) "quizás esto se deba a que los subordinados están más acostumbrados a conductas que tiene más que ver con el liderazgo transaccional que con el liderazgo transformacional" [this could be due to the fact that subordinates are more accustomed to conducts that are more closely related to transactional leadership than to transformational leadership].

The factor explaining the most variance is charisma, to a lesser degree in the sample of leaders and to a greater degree, around 30%, in the sample of subordinates. The author assures that this percentage is still far away from the 66% that this factor achieves in Bass´ studies. The rest of the factors explain much smaller percentages of variance and are similar to those obtained by Bass. " Parecería pues, que los sujetos americanos no sólo discriminan mucho las conductas que componen el liderazgo carismático, diferenciándolo claramente de los otros factores transformacionales, sino que además dicho tipo de liderazgo es sumamente importante para ellos. Para los sujetos españoles dicho liderazgo también es importante, pero aparece mezclado con otras conductas de liderazgo transformacional" [It would seem then, that the North American subjects not only discriminate more closely behaviors that make up charismatic leadership, separating it clearly from the other transformational factors, but for them, this type of leadership is incredibly important. For the Spanish subjects, such leadership is also important, but it seems to be mixed in with other conducts of transformational leadership].

8.1.1.2 Exploratory factor analysis

Transformational leadership research has been expanded in the last two decades. In this line, many authors have attempted to replicate the original factors of leadership proposed by Bass (1985) ,in most cases through the exploratory factor analysis.

Many researches have been carried out using the MLQ (Multifactor Leadership Questionnaire) with different samples. Progress and development of the MLQ was confirmed. Several studies have supported the basic propositions of Multifactor Leadership Theory (Bass, 1990; Howell & Avolio, 1993). Nevertheless, frequent criticism concerning varying validity has been expressed (Yukl, 1999). The independence of the transformational scales was questioned and high correlations with the contingent reward scale has been demonstrated several times. The content of the MLQ has changed over time and several studies have reported different factor structures (Den Hartog, Van Muijen, & Koopman, 1997). Yukl (1999) argues that the differences found are due to underlying conceptual weakness in the transformational leadership model. This aspect has led to important modifications of the original questionnaire. The scale of *Charisma* has been subdivided in *IIA* und *IIB* (individual influence attitude, and individual influence behavior). The MBE scale has also been subdivided in an active and a passive component. Modification and generation of new items along the years have been carried out. However, the problem is likely to be present in the future, since the construct is still in its infancy (Tejeda et al., 2001). Current versions of the MLQ are permanently being proved within different samples and the discussion is still open.

An exploratory factor analysis using the method of the principal components and varimax rotation of the Bolivian sample was conducted in order to analyze and compare the reproducibility of the scales. The sample of the Bolivian companies was made up of 238 subordinates that participated in the filling out of the questionnaires. For this purpose the MLQ-5 Spanish version (70 items) was used. For the subsequent analysis, all those items that had a factorial loading of less than .45 were removed. Six factors were obtained (see Tab. 5).

Tab. 5 Factor Loadings and explained Variance (Bolivian sample)

item	Scale	Factor I 29.7%	Factor II 5.9%	Factor III 3.6%	Factor IV 3.5%	Factor V 2.5%	Factor VI 2.5%
31	IS	**.734**	.164	.155	-6.815E-03	.100	5.650E-02
57	CHA	**.699**	.114	.287	-2.332E-02	7.691E-02	2.635E-03
50	CHA	**.688**	.117	.200	-5.457E-02	6.071E-02	-1.178E-02
60	IC	**.673**	.224	.231	.133	9.283E-02	-8.687E-03
17	IS	**.663**	.136	-.104	.287	.142	4.720E-02
45	IS	**.658**	1.995E-02	.196	3.094E-02	.167	4.434E-03
46	IC	**.646**	.268	.254	5.525E-03	.104	-4.705E-02
59	IS	**.634**	.161	6.791E-02	7.680E-02	3.290E-02	7.685E-02
66	IS	**.627**	.201	.202	-.106	.149	6.813E-02
52	IS	**.610**	.333	.113	-3.125E-03	6.283E-02	1.373E-02
44	IM	**.610**	-4.840E-02	.488	4.228E-02	6.019E-02	-9.430E-03
32	IC	**.605**	7.536E-02	.317	.243	5.864E-02	3.999E-02
37	IM	**.586**	.286	.256	.228	-4.604E-03	-.200
23	IM	**.565**	.247	.283	.188	.199	-4.555E-02
29	CHA	**.558**	.437	.115	.144	7.325E-02	.143
22	CHA	**.557**	.210	-3.301E-02	3.143E-02	.104	.149
67	IC	**.552**	.259	.277	7.136E-02	.108	-2.488E-02
24	IS	**.551**	7.365E-02	.186	.360	.180	.111
30	IM	**.551**	-1.194E-02	.195	.307	3.120E-02	-4.398E-03
53	IC	**.549**	.429	.283	5.376E-02	.161	-.137
09	IM	**.520**	.461	.103	8.356E-02	.368	5.276E-02
11	IC	**.506**	.230	8.611E-02	.210	.302	4.774E-02
03	IS	**.466**	-4.451E-02	-7.678E-02	.349	.363	.120
15	CHA	.370	**.683**	.154	.135	.209	.146
08	CHA	.423	**.658**	.136	.124	.266	.129
64	CHA	.519	**.570**	.138	-4.176E-02	2.431E-02	-8.955E-03
36	CHA	.338	**.552**	.157	2.578E-02	4.441E-03	-5.192E-02
01	CHA	.359	**.531**	.239	.166	.208	.239
68	CRI	.304	.170	**.713**	.136	6.399E-02	3.086E-02
33	CRI	.280	4.253E-02	**.650**	.232	6.617E-02	.204
12	CRI	.354	.290	**.490**	.200	.301	.181
40	CRII	4.557E-02	3.675E-02	.247	**.658**	-.222	5.698E-02
61	CR II	.154	7.185E-03	2.398E-02	**.645**	-.128	-2.562E-02
26	CRII	-2.386E-02	8.904E-02	.156	**.571**	-.238	.186
05	CRII	.173	9.602E-02	.205	**.517**	.158	.176

item	Scale	Factor I 29.7%	Factor II 5.9%	Factor III 3.6%	Factor IV 3.5%	Factor V 2.5%	Factor VI 2.5%
47	CRII	.311	8.675E-02	.224	**.474**	-5.432E-02	-6.070E-02
56	LF	-8.253E-02	-.333	-1.744E-02	6.671E-02	**-.603**	3.309E-02
49	LF	-.155	-8.250E-02	1.747E-02	6.939E-02	**-.591**	9.151E-02
70	LF	-.171	-.150	-7.564E-02	.165	**-.492**	6.352E-02
35	LF	-.170	-2.565E-02	-.247	3.058E-02	**-.489**	.201
07	LF	-9.695E-03	7.190E-03	-6.394E-02	.120	-2.450E-02	**.578**
13	MBE	-.115	.217	.155	-.103	-4.744E-02	**.576**
06	MBE	.121	.198	.162	3.757E-02	4.564E-02	**.539**
28	LF	3.929E-04	-6.658E-03	-.228	2.153E-02	-.332	**.505**
34	MBE	.159	1.846E-02	-2.783E-02	-3.022E-02	-.229	**.505**
14	LF	3.958E-02	4.733E-02	3.986E-04	.220	5.246E-02	**.468**

Transformational scales CHA: Charisma IM: Inspirational motivation IS: Intellectual stimulation IC: Individual consideration Transactional scales CR: Contingent reward MBE Management by exception LF: Laissez faire

This solution results in six factors (46 items). Almost 48% of variance is explained (see Tab. 5). FACTOR I groups the items that Bass (1990) calls charisma, inspiration, intellectual stimulation and individualized consideration. Factor II CHARISMA includes the items that Bass originally considers within the factor charisma, with the exception of item 16 that corresponds to inspiration. This last one was removed in order to avoid elevated correlations between both factors. Factor III CONTINGENT REWARD (re-enforcing leadership), mainly groups those items that correspond to the leader's capacity for recognizing and re-enforcing his subordinates when they do a good job. It coincides partially with what Bass calls by the same name. Items 39, 43 and 63 have been removed because they belonged to the factors of charisma, individualized consideration and laissez faire respectively, and also in order to avoid the high correlation between the factors. Factor IV CONTINGENT REWARD (negotiating leader), coincides completely with the items that Bass calls "contingent reward". This factor complements factor III indicating those leaders that negotiate and point out with clarity the rewards that will be received for a well done job. Factor V LAISSEZ FAIRE (-), this factor, as in the Spanish samples, groups the items with a negative factor loading. Item 10 was removed because it had an acceptable factorial loading similar to factors I and V and also in order to avoid an elevated correlation between the factors. Factor VI MANAGEMENT BY EXCEPTION (PASSIVE) groups those items that Bass calls management by exception passive and laissez faire. It

identifies the leader intervening only when things are not going well. The leader waits for deviations from the norm to occur before taking pertinent measures. As already mentioned, the factor obtained coincides with Bass´ factor of management by exception passive and merges with the items of laissez faire. This fact is well worth considering because frequently both components could not be separated (Bycio, Hackett and Allen, 1995). This aspect indicates low independence of both factors from each other. In the Bolivian companies a leader that manages by exception passive is perceived as a laissez faire leader. This should not surprise since both factors indicate passive-avoidance behaviors and were also considered as a whole second order factor in former studies. With regard of the reliabilities, note that the scales MBE and Laissez-faire do not reach the Nunally's cut-off criteria of .70

Tab. 6 Explained Variance of the MLQ factors and reliabilities of the scales (Bolivian sample)

Factor	Items	Variance	Alpha
Factor I	23	29.7%	.94
Charisma	5	5.9%	.87
Contingent Reward I(re-enforcing leadership)	3	3.6%	.80
Contingent Reward II (negotiating leadership)	5	3.5%	.72
Laissez-faire (-)	4	2.5%	.65
MBE (passive)	6	2.5%	.61

The six factors extracted account for 48% of variance. Several similarities to Molero's studies can be shown (see Tab. 4). Regarding transformational scales, Bolivian employees perceive transformational behaviors in a grouped manner. Contrary to expectations, the factor INDIVIDUAL CONSIDERATION does not represent an independent factor. The factor CONTINGENT REWARD in the Bolivian sample is divided in two sub-factors: re-enforcing leader and negotiating leader as in Spanish subordinate samples. The scale MANAGEMENT BY EXCEPTION is also represented by the passive management. Items like "Evita intervenir, excepto cuando no se consiguen los objetivos" [Avoids intervening, except when objectives are not reached] indicate more passive than active management. Acting only problems occur and showing less interest on processes also represent a passive behavior. As can be observed, the explorative factor analysis is more similar to Spanish studies than to

American ones. Nevertheless, the differentiation of the second order factor (transformational and transactional) is clearly apparent.

Although this factor solution is not optimal and did not succeed in reproducing four independent transformational scales, its findings can be considered to confirm the central assumptions of the model and provide a basis for further developments of the instrument. The main concern was to keep the Spanish version of the MLQ as close to the original as possible. Evidently some modifications has to be made since the empirical findings (i.e. items of charisma, inspiration, intellectual stimulation and individualized consideration are grouped in two factors, Mbe and laissez-faire do not represent two independent factors) do not show a perfect replication of the original scales. Reasons for possible modification will be discussed in concluding the discussion section. Besides, it is worth mentioning that the MLQ is a questionnaire that has been developing through many years and, even today, various versions are being improved throughout different studies in a variety of samples. Several authors have attempted to investigate alternative factor models (Bycio, Hackett & Allen, 1995; Den Hartog et al., 1999; Geyer & Steyrer, 1998). Two or three factor solutions were reported. These results were not similar, nor have they been replicated. Consistently, similar difficulties appear in German studies (Kroeger & Tartler, 2002). Nevertheless, I have decided not to summarize two transformational scales, but instead to use the theoretically postulated scales for the present, because the main aspect has been confirmed, namely the maintenance of both leadership second order factors, transformational and transactional. Further reasons for this decision are that even redundancy concerning the relationships between the scales, information concerning differences in levels and comparability to other studies might be lost.

8.1.1.3 Confirmatory factor analysis

Considering that current versions of the MLQ measure 9 factors by using 27 items as in the case of the MLQ 5X short, a reduced and manageable version of the Spanish version has been performed. The 70 original items and the postulated scales of the long version were analyzed. The items with the highest item-to-subscale correlation were chosen (see Tab. 7).

Tab. 7: Descriptive statistics of the MLQ reduced

Item	Label	N	Min	Max	Mean	SD	Item-subscale correlation
	Carisma (Charisma)						
8	Me siento orgulloso de trabajar con él	238	1	5	3.94	1.12	.655
15	Tengo completa confianza en él	238	1	5	4.06	1.11	.671
29	Para mí es un símbolo de éxito y eficacia	238	1	5	3.63	1.11	.659
64	Confío en su capacidad para superar cualquier obstáculo	238	1	5	4.03	1.06	.660
	Inspiración (Motivational Inspiration)						
9	Presenta las cosas con un enfoque que me estimula	238	1	5	3.48	1.12	.684
16	Expresa nuestro objetivos de una manera sencilla	238	1	5	3.82	1.03	.588
23	Desarrolla formas de motivarnos	238	1	5	3.08	1.18	.673
44	Me comunica expectativas de alto rendimiento	238	1	5	3.58	1.25	.630
	Estimulación Intelectual (Intellectual Stimulation)						
24	Me proporciona razones para cambiar la forma en la que abordo los problemas	238	1	5	3.22	1.09	.624
45	Consigue que logre identificar los aspectos clave en los problemas complejos	238	1	5	3.43	1.14	.640
59	Comprueba que piense en todas las implicaciones antes de actuar	238	1	5	3.53	1.03	.603
66	Hace que nos basemos en el razonamiento y la evidencia para resolver los problemas	238	1	5	3.80	1.05	.659
	Consideración Individualizada (Individualized Consideration)						
32	Descubre lo que quiero y me ayuda a conseguirlo	238	1	5	3.02	1.18	.633
39	Me expresa su aprecio cuando realizo un buen trabajo	238	1	5	3.32	1.28	.609
46	Se preocupa de formar a aquellos que lo necesitan	238	1	5	3.37	1.26	.690
60	Está dispuesto a instruirme o enseñarme siempre que lo necesite	238	1	5	3.61	1.17	.686
	Recompensa Contingente (Contingent Reward)						
12	Sabe reconocer mis logros	238	1	5	3.26	1.22	.668
19	Se asegura de que exista un fuerte acuerdo entre lo que se espera qeu yo haga y lo que puedo obtener de él por mi esfuerzo	238	1	5	3.27	1.23	.562

Item	Label	N	Min	Max	Mean	SD	Item-subscale correlation
33	Cuando trabajo bien me elogia	238	1	5	3.20	1.23	.590
68	Me elogia cuando hago bien mi trabajo	238	1	5	3.15	1.22	.595
	Dirección por Excepción (Management by Exception)						
20	Está satisfecho con mi trabajo mientras se cumplan las normas establecidas	238	1	5	4.25	.79	.425
34	Evita intervenir, excepto cuando no se consiguen los objetivos	238	1	5	3.13	1.23	.148
62	Centra su atención en los casos en los que no consigo alcazar los niveles y cuotas de producción esperados	238	1	5	3.55	1.08	.341
69	Se las arregla para saber cuando las cosas van mal	238	1	5	3.56	1.09	.304
	Laissez Faire (Laissez-faire)						
7	Evita decirme como tengo que hacer las cosas	238	1	5	3.01	1.26	.042
14	Evita mostrar preocupación por los resultados	238	1	5	2.70	1.21	.177
63	Me hace sentir que todo lo que hago le parece bien	238	1	5	3.18	1.13	.565

The selectivity of the items was considered as satisfactory with a range between .30 and .69. Three exceptions can be observed item 7, 14 and 34 showed a small selectivity (.042, .177 and .148 respectively). Nevertheless they were maintained since their elimination would not raise the reliability of the instrument significantly. A seven factors solution is proposed: *charisma*= 4 Items (8, 15, 29, 64) , *inspiration*= 4 items (9, 16, 23, 44), *intellectual stimulation*= 4 items (24, 45, 59, 66), *individualized consideration*= 4 items (32, 39, 46, 60), *contingent reward*= 4 items (12, 19, 33, 68), *management by exception*= 4 items (20, 34, 62, 69) and *laissez-faire*= 3 items (7, 14, 63). Additionally, the internal success criterion namely *extra effort* (Cronbach's alpha .93.) was measured through 3 items (51, 58, 65) (see appendix).

By using a technique of confirmatory factor analysis (CFA) three models have been evaluated (see Tab. 8). The index of adjustment made of every hypothesized structure and the data of the sample with 238 participants were assessed.

The number of factors necessary to achieve an optimal model-fit was discussed several times in the literature (Bycio et al, 1995; Bass & Avolio, 1995, Geyer & Steyrer, 1998; Kroeger, 2001; Tartler, 2001). German studies recommend to use both ver-

sions (five factors and two factors for transformational scales) in order to ensure a comparison to other results. Contingent reward was not confirmed as an independent factor either (Felfe, 2002).

In this study, I have relied on LISREL 8 (Jöreskog & Sörbom, 1994) to determine whether the data are best represented by one general factor, two correlated factors (Transformational and Transactional Leadership), or by seven correlated factors (charisma, inspirational motivation, intellectual stimulation, individual consideration, contingent reward, management by exception and laissez faire). The item-level covariance matrix was analyzed using maximum likelihood estimation, and standardized results are presented. The models of the structural equations estimated provide the global adjustment of the model by the use of the Chi-square statistical adjusted goodness of fit.

The program Lisrel 8 gives the goodness of fit index (GFI) and the adjusted goodness of fit index (AGFI). Both are based on the comparison between the observed sample matrix and the reproduced matrix. Lisrel generates an estimated matrix by using an investigator-specified factor structure as a guide. If only small differences exist between the actual and the estimated matrices, the hypothesized structure is viewed as a plausible one. Unfortunately, there is a lack of consensus on how to best determine when a difference is small (Bentler, 1990). As recommended by Bollen (1989 cited in González and Antón, 1995), the relative fit of the models by using several indices was assessed: the nonnormed fit index (NNFI), the comparative fit index (CFI), the goodness-of-fit index (GFI), the adjusted goodness-of-fit index (AGFI), and the root-mean-square residual (RMSR) (Jöreskog & Sörbom, 1994). CFA has been critically discussed as a replication and confirmation of factor structures (Felfe, 2002), but for comparative purposes this procedure has been applied.

Tab. 8: Overall Fit Indices for the Spanish version of the Multifactor Leadership Questionnaire-5 scales (Bolivian sample)

Model	χ^2	Df	NNFI	CFI	GFI	AGFI	RMSR
One general factor	2883.24	334	.12	.13	.30	.23	.34
Two correlated factors (*)	836.77	323	.77	.79	.75	.70	.072
Seven correlated factors	756.54	303	.82	.85	.80	.76	.065

N=238, NNFI= non-normalized fit index; CFI= comparative fit index; GFI= goodness-of-fit index; AGFI= adjusted GFI; RMSR= root-mean-square-residual.
(*) one transactional factor and one transformational factor.

As shown in table 8, as one progresses from the most restricted model (one general factor) to the least restricted model (seven correlated factors), the indexes generally exhibit increasing improvements in overall fit. This aspect is not surprising, since "models with a great number of free parameters (i.e. less restricted) will by definition fit better"… (Bycio et al., 1995). Still, improvements are apparent even among the adjusted goodness-of-fit index. Nevertheless the criteria for a good fit model are still unsuccessful. Instead of a .90 demanded value for GFI and AGFI the seven factors model achieve .80 and .76 respectively. The Nonnormed fit index of .82 of Bentler and Bonnet (1980) is the closest to .90, a benchmark of good overall fit. In German studies, the analysis of current versions of the MLQ, as conducted by Kroeger (2001) and Tartler (2001) have reported that a nine-factors structure shows better Goodness of fit index, nevertheless still not satisfactory results. Felfe's (2002) studies using a nine-factor model achieve a GFI and AGFI index with .827 and .789 respectively. Setting free error correlations the values rise to .887 (GFI) and .858 (AGFI).

8.1.2 Descriptive statistics

8.1.2.1 Transformational leadership

In order to achieve a complete picture and for comparative purposes, statistics for both factor solutions are presented (seven first order factors and two second order factors model). For further analysis the two factor solution will be used.

Tab. 9: Descriptive statistic of the MLQ reduced scales

Scale	N	Min	Max	Mean	SD	Alpha
Charisma or Idealized Influence (IA)	238	1	5	3,80	1,0	,87
Inspirational motivation (IM)	238	1	5	3,38	,97	,78
Intellectual stimulation (IS)	238	1	5	3,40	,92	,80
Individual consideration (IC)	238	1	5	3,24	,99	,78
Contingent reward (CR)	238	1	5	3,10	1,0	,78
Management by exception (MBE)	238	1	5	3,46	,67	,32
Laissez faire (-) (LF)	238	1	5	2,93	,90	,45
Extra Effort	238	1	5	3.5	.97	.76

The mean values of the scales from charisma to MBE is over the theoretical mean (3). The only exception is the case of the laissez faire scale with a mean of 2.93.

The mean values for the transformational scales range between 3.24 and 3.80. Considering the scales labels, the scores imply that those behaviors were observed "sometimes" to "fairly often". The mean values are similar to those in other studies using MLQ 1 and MLQ-5 (Bass, 1985; Bass & Avolio, 1990). "Among followers of U.S. Army personnel attending War College, those responding to the MLQ-1 indicated that transformational leadership typically occurred sometimes or fairly often"… (Bycio et al.,1995). Waldman et al. (1987) and Keller (1992) cited by Bass, 1990 reported means for charismatic leadership and intellectual stimulation ranging between 1.98 and 3.20 in manufacturing and development environments research (these results have to be transformed one point upwards respectively as the original scale is from 0= never to 4= always). Results of Bass and Avolio (1995) reported means of transformational scales with values between 3.51 and 3.64 (transformed values). Studies of health organizations in Spain reported charismatic leadership values with a mean of 3.25 (Molero, 1994). German studies reported lower level of transformational behaviors. Values range from 2.81 to 3.29 for the transformational scales.

The lower means of transactional scales ranging between 3.10 and 3.46 are similar to Molero's values in Spanish samples: contingent reward (reinforcing leader) with 3.21. German samples present transactional scales values ranging from 2.55 to 3.30 (Felfe & Goihl, 2002). Bass and Avolio, 1995 report values ranging from 2.11 to 3.20 in the transactional scales.

The profile of the results does not correspond to an optimum leader. An optimum leader would be described as follows: with a value superior to 3 in the transformational scales, a value less than 2 in the transactional scales and less than 1 in the laissez faire factor (Avolio and Bass,1995). It is important to consider that the American scales are coded from 0 to 4. In the Spanish MLQ version form 1 to 5. Therefore Avolio and Bass´ optimum values must be corrected respectively by one point upward.

Extra effort criterion shows a mean value of 3.5, which is a little bit over the theoretical mean. Bycio et al. (1995) report values of 3.7 in his studies with American samples (the values have to be corrected 1 point upwards). In German samples a mean of 2.88 is reported (Felfe, 2002). Considering the items as a scale, internal consistency (Cronbach´s alpha) is strengthened.

Reliabilities (Cronbach's alpha) for the different transformational scales and for contingent reward can be considered as satisfactory. They reach Nunnally´s criteria (1978) of .7. In case of the MBE and laissez faire scales with a Cronbach´s alpha of .32 and .45, values are not satisfactory. Generally, transactional leadership scales present less reliable values than transformational leadership scales. Future modifications in the Spanish version should consider this aspect. The intercorrelations between the items in this scales (MBE and Laissez-faire) are presented below.

Tab. 10: Inter-correlations MBE and laissez faire scale items

MBE	20	34	62
34	.06		
62	.16*	.05	
69	-.01	.15*	.20**

LF	7	14
14	32**	
63	.11	.19**

** The correlation is significant with p<f 0.05*
*** The correlation is significant with p< 0.01*

In the MBE scale, the items 20 and 69 show a negative correlation of r= -.01, while all the other correlations are positive. Item 20 has a greater correlation with item 62 than with item 34. Item 34 does not show any correlation with item 62 and with item 69 the correlation is r= .15. The correlation between item 62 and item 69 is .20 significant. The removal of neither one of these items elevates the reliability scale significantly.

In case of the laissez faire scale, all the correlations are positive. Item 7 and 14 are correlated in r= .32. Item 7 and item 63 do not show any correlation. Item 14 and 63 correlate in r= .19. (see Tab. 10) By removing item 63 from the scale, the reliability is increased to an α=.48, which still does not raise the scale reliability to Nunally (1978) cut-off criteria of .7

Tab. 11: Descriptive statistics of the second-order factors model

Scale	N	Minimum	Maximum	Mean	SD	Alpha
Transactional Leadership	238	1	5	3.04	.75	.71
Transformational Leadership	238	1	5	3.53	.87	.93

In case of the second order factor solution, transformational leadership shows a mean behavior of 3.53, which means that these behaviors appear "sometimes" and "fairly often" according to the perception of the followers. The mean values of transactional

leadership of 3.04 are a bit below the last one implying the appearance of the behavior "sometimes". The values are close to each other. Nonetheless, there is a tendency to appreciate transformational leaders more than transactional ones. The reliability indexes are over the cutoff- criteria of alpha= .7 (see Tab. 11)

As expected, a high correlation between the transformational leadership and the extra effort scale was found (r= .74). In the case of transactional leadership, the correlation is lower but also significant (r= .59) (see Tab. 13).

Tab. 12 Intercorrelations of MLQ reduced scales

Scale	CHA	IM	IS	IC	CR	MBE	LF
Charisma(CHA)	1.0						
Inspirational motivation (IM)	.70**	1.0					
Intellectual stimulation (IS)	.62**	.71**	1.0				
Individual consideration (IC)	.64**	.74**	.71**	1.0			
Contingent reward (CR)	.57**	.64**	.62**	.76**	1.0		
Management by exception (MBE)	.41**	.40**	.50**	.42**	.38**	1.0	
Laissez faire(-)(LF)	.29**	.26**	.20**	.28**	.32**	.25**	1.0
Extra Effort	.63**	.73**	.73**	.77**	.63**	.42**	-.31**

** *The correlation is significant with p<0.01.*

Note that transformational scales are highly interrelated. The values range between r =.62 and r =.74, this has been frequently criticized.. The Contingent Reward scale shows a greater correlation with the transformational leadership scales than with transactional leadership scales, and it presents even greater correlations than transformational scales among themselves.

Many investigations show high interrelations between the transformational scales and even high correlations with the scale contingent reward, whereas contingent reward and management by exception (active) correlate on a lower level. Molero (1994) also reports positive correlations between the scales charisma and contingent reward I (re enforcing leader). Avolio et.al. (1999) report an average intercorrelation among the transformational scales of r = .81, while the average was r = .75 between the transformational scales and contingent reward. In the replication study, the average intercorrelation among the transformational scales was r = .80, while the average correlation with contingent reward leadership was r = .69. These high values were explained by using hierarchical models which indicated that the transformational and

transactional contingent reward scales load on two higher-order correlated factors. The authors argued that correlations between the transformational and transactional contingent reward leadership scales can be expected because both styles of leadership represent active and constructive forms of leadership, since transactional contingent reward leadership may be the basis for structuring developmental expectations, as well as building trust, because of a consistent honoring of "contracts" over time. Also effective leaders display varying amounts of both transactional and transformational leadership (Avolio & Bass, 1995; Bass & Avolio, 1993, 1994).

Nevertheless the high interrelations indicate low discriminating validity and low independence of the scales. Also in German investigations the difficulties to replicate the factors are reported. By using current versions of the questionnaire (MLQ 5X), the transformational scales interrelations found are between r=.57 and r=.72 (Felfe 2002). Contingent reward correlate with the transformational scales also in this extent (Kramer, 2001).

Tab. 13: Correlation between the MLQ scales and the external criterion extra effort.

Scale	CHA	IM	IS	IC	CR	MBE	LF	Transformational Leadership	Transactional Leadership
Extra Effort	.63**	.73**	.73**	.77**	.63**	.42**	-.31**	.81**	.65**

***significant with p<0.01 N=238*

As expected, high positive correlations are presented mainly between the transformational leadership scales and extra effort. The ranges are between r= 63 to r=.77. There are also positive correlations, even though not as great, in the case of factors of transactional leadership (greater in contingent reward than in MBE) (see Tab. 13). For comparative purposes consider that Molero (1994) in Spanish samples report correlations of extra effort r = .85 with charisma, r=.81 with contingent reward (reinforcing leader), r= .15 with contingent reward (negotiating leader), r= -.34 with MBE and r= -.78 with laissez-faire. In German samples, correlations of extra effort and transformational scales are between r=.67 and r=.78, and with transactional scales between r=.27 and r=69. MBE passive and Laissez-faire show negative correlations of r= - .55 and r= -.65 respectively.

In regard of the second-order factors, results are as expected, transformational leadership presents a higher correlation with extra effort criterion than transactional lead-

ership. A mean comparison analysis show significant results t(df)= 6.112 (235) ($p<0.01$).

One important assumption within the model of transformational leadership is the augmentation effect, which has been replicated in many studies.

8.1.2.2 Augmentation hypothesis

The assumption of a positive correlation between the transformational scales and the success criteria (Effectiveness, extra effort and satisfaction) has been confirmed several times. According to Bass and Avolio's postulations, in most studies (Bass & Avolio, 1995; Fuller et al., 1996; Lowe et al., 1996) higher correlations with success indicators were found for the transformational scales rather than for the transactional dimension contingent reward. Consistently lower correlations were shown for management by exception passive and laissez faire. Hierarchical regressions were carried out in several studies to verify the "augmentation effect" (Hater & Bass, 1988; Howell & Avolio, 1993). It describes an additional explanation of the criterion's variance, when transformational leadership is used for prediction after transactional scales have already entered the regression model.

There are three items included in the MLQ that give information about the external criterion extra effort. Some of them are: "Consigue que yo haga más de lo que esperaba poder hacer" [Makes me do more than I expected to be able to do], "Potencia mi motivación de éxito" [Makes my motivation for success stronger]. In the Bolivian samples, the scale of extra effort has a reliability of Cronbach´s alpha= .76

For this purpose a hierarchical regression analysis was carried out. An F test was used to determine if the transformational scales added any significance to the prediction of the outcome variable. The first block is composed by transactional leadership and the second block by transformational leadership.

Tab. 14 Hierarchical Regression analysis for prediction of extra effort

Criterion	Model	Beta	R^2	Change in R^2
Extra effort	1	.063	.427	.427**
	2	.770	.669	.242**

***Significant with p<0.01Model 1: Transactional leadership. Model 2: Transformational leadership. N=238*

As can be seen in Tab. 14, a significant increase of R^2 appears for predicting extra effort when transformational leadership is added in comparison with a prediction through transactional leadership. In other words, the additional explanation of variance, which is contributed by transformational leadership for predicting the extra effort criterion, is significant. (change in R^2: *extra effort* .242, $p<0.01$).

The condition index of colinearity problem is 18. This aspect must be taken into account in future analysis of prediction. A possible colinearity problem, which may arise, is however, not a serious problem.

8.1.3 Commitment

8.1.3.1 Former results

Arciénega (2001) carried out a study with samples of different countries in Central and Latin America. The author obtained the data from 82 employees working in the same company. Represented in Mexico, Puerto Rico and Venezuela, employees of the company filled in commitment questionnaires through an internet access. For his investigation a Spanish version of Meyer and Allen commitment scales was used. Taking into account the behavior of the items in each one of the scales of the Spanish version in studies conducted in Spain (Frutos, Ruiz & San Martín, 1998; González & Antón, 1995). Arciénega (2001) chose for his studies the 6 items of each scale that had the highest factor loadings in the validity analysis. He decided not to use items that had a negative connotation. Fit index and internal consistencies are reported in Tab. 15.

Tab. 15: Goodness of fit indexes and internal consistency of Organizational commitment scales (Arciénega, 2001)

Factor	items	Chi Square (df)	CFI	Alpha
Affective commitment	6	37,871 (9)	0,923	.92
Continuance commitment	5	7,949 (5)	0,951	.67
Normative commitment	5	10,157 (5)	0,956	.77

Two items were eliminated after its regression analysis, one in the continuance commitment scale and the other in the normative scale. By their elimination the goodness-of-fit indexes in the individual analysis of either scale was improved (see Tab. 15)

8.1.3.2 Exploratory Factor analysis

An exploratory factor analysis using the method of the principal components and varimax rotation of the Bolivian sample was conducted for comparative purposes and for obtaining a model useful in further analyses (see Tab. 16). The sample was made up of 256 employees that participated in the filling out of the commitment questionnaires.

Tab. 16: Factor loadings and explained variance within organizational commitment scales (Bolivian sample)

Item	Scale	Factor I 36.2%	Factor II 10.8%	Factor III 7.3%
12	AOC	**,741**	,319	8,361E-02
7	AOC	**,693**	,234	,109
14	AOC	**,668**	,260	4,506E-03
17	NOC	**,661**	,130	,350
11	AOC	**,643**	,311	,153
16	AOC	**,638**	-9,927E-02	2,930E-02
13	COC	**,621**	,328	,370
9	NOC	**,606**	,348	4,374E-03
2	NOC	,181	**,722**	,149
6	NOC	,202	**,700**	,270
5	NOC	,209	**,696**	,196
3	AOC	,525	**,542**	-5,715E-02
1	AOC	,137	**,508**	-,167
10	NOC	,368	**,469**	,201
18	COC	2,694E-04	-9,690E-02	**,784**
8	COC	9,130E-02	,160	**,759**
15	COC	,322	7,252E-02	**,688**
4	COC	4,544E-02	,450	**,635**

There resulted three factors that explain 54.5% of variance. Factor I AFFECTIVE COMMITMENT groups the items of affective and normative commitment. Item 13 belongs to the continuance commitment scale. Deleting this item from the scale reduces Cronbach's alpha from .86 to .83. Factor II NORMATIVE COMMITMENT; the items of this factor coincide with the normative items of Arciénega (2001). Item 1 was originally a continuance commitment item that had been used in the affective

scale where it was reformulated in order to achieve the expected behavior. By deleting this item from the scale, the reliability is raised from .78 to .79. Factor III CONTINUANCE COMMITMENT; its items coincide also with the original scale of Arciénega (2001).

Note that item 3 and item 10 load similarly to factor I an d factor II. The first belongs originally to the affective scale but loads also on normative commitment. Viceversa, the case of item 10. It belongs originally to the normative scale but also load on factor I (affective scale). Only four items clearly load on the continuance commitment scale.

In general terms, the exploratory factor analysis replicates the three original factors of Arciénega (2001). Three dimensions of commitment are differentiated (affective, normative and continuance). Therefore the Spanish version was used in this investigation.

Tab. 17: Internal consistency and explained variance (Bolivian sample)

Factor	No. of items	Variance	Alpha*	Alpha**	Alpha***
Affective commitment	8	36.2%	.86	.85	.73
Normative commitment	6	10.8%	.76	.73	.67
Continuance commitment	4	7.3%	.74	.79	.66

** mean of reliabilities (α) found in the Bolivian sample scales*
*** mean of reliabilities (α) found in studies with the original version (Meyer & Allen, 1997)*
**** mean of reliabilities (α) found in studies in Spain (González & Antón, 1995)*

The reliabilities (Cronbach's alpha) for the different scales are presented (see Tab. 17 Alpha*). While the internal consistencies of the affective scale can be regarded as satisfactory, the reliabilities of the other two scales are relatively weak but still over the Nunally (1978) cut-off criteria .7.

8.1.3.3 Confirmatory Factor analysis

Arciénega's Spanish version was used to assess commitment. With the exception of item 18, the selectivity of the items is considered as satisfactory, ranging from .32 to .72 (see Tab. 18). Therefore the majority of the items was maintained in their scales. Item 1 was eliminated to avoid confusion. Originally it was a continuance commitment item but should be reformulated and recoded in order to appear in the affective scale and, by the exploratory analysis loaded on the normative scale.

Tab. 18 Descriptive statistics of the commitment items

Item	Label	N	Min	Max	Mean	SD	Item-subscale correlation
	Affective Commitment						
3	Tengo una fuerte sensación de pertenecer a mi empresa	256	1	7	6.01	1.23	.558
7	Esta empresa tiene un gran significado personal para mí	256	1	7	6.07	1.15	.572
11	Sería muy feliz pasando el resto de mi vida laboral en esta empresa	256	1	7	5.41	1.64	.599
12	Me siento como parte de una familia en esta empresa	256	1	7	5.89	1.33	.643
14	Realmente siento como si los problemas de esta emoresa fueran mis propios problemas	256	1	7	5.94	1.25	.528
16	Disfruto hablando de mi empresa con gente que no pertenece a ella	256	1	7	5.90	1.36	.326
	Continuance Commitment						
4	Una de las principales razones para seguir trabajando en esta compañía, es que dejarla supondría un considerable sacrificio	256	1	7	4.09	1.94	.518
8	Creo que tengo muy pocas opciones como para considerar la posibilidad de dejar esta empresa	256	1	7	3.91	1.99	.444
13	Ahora mismo sería muy duro para mi dejar mi empresa, incluso si quisiera hacerlo	256	1	7	5.48	1.58	.724
15	Demasiadas cosas en mi vida se verían interrumpidas si decidiera dejar ahora mi empresa	256	1	7	4.81	1.81	.524
18	Una de las pocas consecuencias negativas de dejar esta empresa sería la escasez de alternativas disponibles (de otros empleos)	256	1	7	4.21	1.79	.262
	Normative Commitment						
2	Una de las principales razones por las que continúo trabajando en esta compañía es por que creo que la lealtad es importante	256	1	7	5.34	1.82	.528
5	Aunque tuviese ventajas con ello, no creo que fuese correcto dejar ahora mi empresa	256	1	7	5.00	1.81	.562
6	Me sentiría culpable si dejase ahora mi empresa	256	1	7	4.65	1.89	.598
9	Esta empresa se merece mi lealtad	256	1	7	6.26	1.09	.531
10	Ahora mismo no abandonaría mi empresa, porque me siento obligado con su gente	256	1	7	5.32	1.54	.544
17	Creo que le debo mucho a esta empresa	256	1	7	5.64	1.38	.611

Through the use of the technique of the confirmatory factor analysis (CFA), the adjustment index between every structure of the hypotheses and the data of the 256 participants was evaluated. Based on the level of adjustment between the data and the model itself, the conservation of all the items of each scale or subscale was determined. Also the elimination of some of them up to the goodness-of- fit indexes of adjustments showing acceptable levels, was discussed.

Tab. 19: Overall Fit Indexes for the commitment scales (Bolivian sample)

Model	χ^2	Df	NNFI	CFI	GFI	AGFI	RMSR
One general factor	589.23	119	.69	.73	.76	.69	.093
Three correlated factors (*)	506.13	116	.74	.78	.81	.75	.093
Four correlated factors (**)	431.18	113	.78	.82	.83	.77	.080

N=256. NNFI= non-normalized fit index; CFI= comparative fit index; GFI= goodness-of-fit index; AGFI= adjusted GFI; RMSR= root-mean-square-residual.
(*) affective commitment, continuance commitment and normative commitment (**)affective commitment, continuance commitment costs, continuance commitment alternatives and normative commitment

One general factor, three correlated factors and further four correlated factors are reported (see Tab. 19). De Frutos et. al. (1998) analyzed the four factors model, a better fit of this model questioned the unidimensionality of the continuance scale. His results also support the propositions of McGee and Ford (1987), Meyer et.al. (1989) and Hackett, Bycio and Hausdorf (1994). In this investigation the four factors model also fits better than the others, an aspect that confirms the proposed subdivision of the continuance commitment scale in two factors: *costs of abandonment* and *lack of alternatives*. Nevertheless, the available Spanish version of Arciénega (2001) was used in this investigation in view of the advantages mentioned above. According to this, the GFI of .81 (Jöreskog & Sörbom, 1994) for the three factors model can be considered as moderately good. These results can be improved in the future, nonetheless the Spanish version is considered as appropriate to measure this construct regarding the satisfactory replication of the factors achieved. Moreover, Arciénega (2001) obtained high reliabilities and satisfactory fit indexes of the instrument in former studies in Latin America.

8.1.4 Descriptive Statistics

8.1.4.1 Commitment

Previous to the analysis, descriptive statistics were calculated. For comparative purposes each commitment scale has been analyzed individually. The calculation procedure is the same for each of them. A one-dimensional structure was hypothesized and each of the items has been associated with the respective construct.

Tab. 20: Descriptive statistics of the commitment scales

Scale	N	Min	Max	Mean	SD	Alfa
Affective commitment	256	1	7	5,80	1,05	.81
Continuance commitment	256	1	7	4,44	1,37	.76
Normative commitment	256	1	7	5,26	1,17	.79

The mean values of the three scales exceed the theoretical mean (4), affective and normative commitment clearly above the continuance commitment scale. Affective commitment is the one that appears with greater intensity in the sample. Regarding the labels used it implies almost "moderately agree". Contrary to expectations, continuance commitment does not present a high mean value. The three scales demonstrate an acceptable reliability level that is above Nunally´s (1978) cut-off criteria.

Tab. 21: Correlation of commitment scales

	Affective commitment	Continuance commitment	Normative commitment
Affective commitment	1.00	.43**	.67**
Continuance commitment	.43**	1.00	.55**
Normative commitment	.67**	.55**	1.00

*** Significant with p< 0.01*

The commitment scales are positively interrelated ranging between r=.43 and r=.67. The highest correlation is between affective and normative commitment r= .67. Both scales correlate with continuance commitment in r= .43 and r= .55 respectively. De Frutos et al. (1998) also report a high correlation between affective and normative commitment r= .86 whereas continuance commitment shows lower relationships to affective and normative commitment, namely r= .45 and r= .46 respectively.

A correlation analysis reports a significant difference between affective and normative commitment on the one hand and affective and continuance commitment on the other with $p < 0.01$. Although all the correlations are positive and significant these results confirm the assumption that affective and normative commitment are highly interrelated. A person who achieves high scores in affective commitment will also do it in normative commitment.

8.1.4.2 Affective commitment

Tab. 22: Descriptive statistics of the affective commitment scale

Item	N	Minimum	Maximum	Mean	SD
3	256	1	7	6.0	1.2
7	256	1	7	6.0	1.1
11	256	1	7	5.4	1.6
12	256	1	7	5.8	1.3
14	256	1	7	5.9	1.2
16	256	1	7	5.9	1.3

If we take into account that the range of answers to the items was from 1 to 7, the level of affective commitment of the 256 employees can be considered as high. With the exception of item 11, the rest of the 5 items had a mean very close to 6. All the items of the original scale (Arciénega, 2001) were kept, since the reliability indexes had a value greater than .7 and the removal of any of these did not improve the general scale considerably.

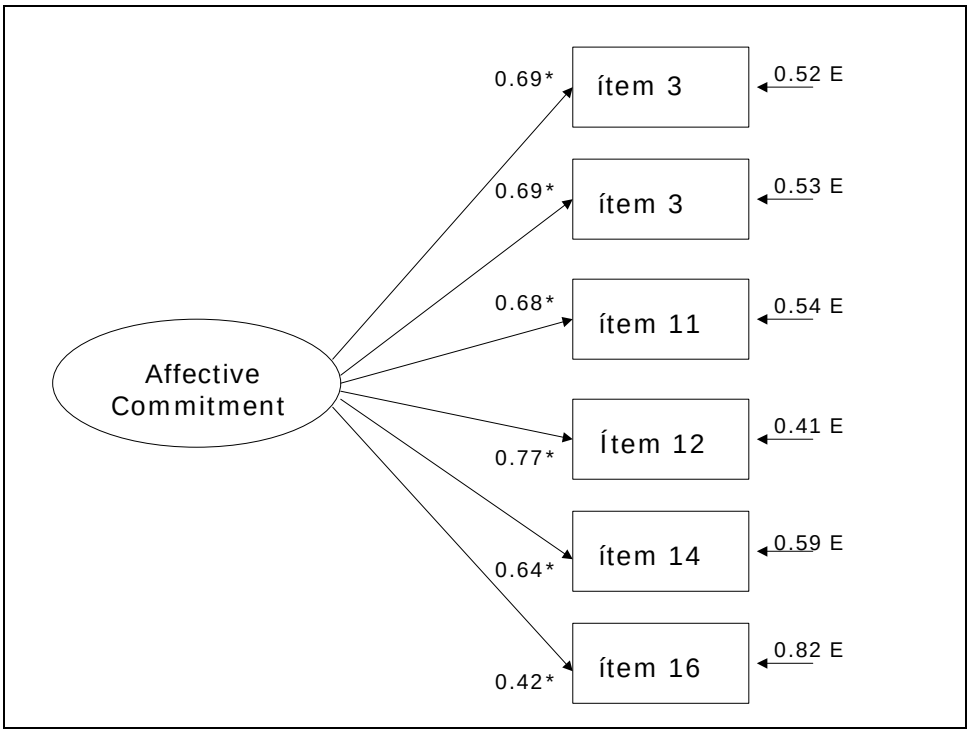

Fig. 3: Structure of affective commitment scale.

The adjusted goodness-of-fit indexes for the one-dimensional model were satisfactory:

χ^2 =13.59 df= 8,.GFI= 0.98, AGFI= 0.95, RMSR= 0.030. Based on these results and the high coefficients of regression associated to each item (see Figure 1), no changes have been made in the scale.

Tab. 23: Reliability: Cronbach´s α of affective commitment scale.

Scale	Item	α if the items is removed	Alpha
Affective commitment	3	.78	0.817
	7	.78	
	11	.77	
	12	.75	
	14	.78	
	16	.82	

Cronbach´s alpha of reliability was calculated for the affective commitment scale, obtaining as a result an α= 0.817 (see Tab. 23). Arciénega, (2001) in his study in Mexican samples, reports a Cronbach's alpha of 0.9206 for the affective commitment scale. In the original English version a range of 0.74 to 0.89 has been reported (Allen

& Meyer, 1990; McGee & Ford, 1987; Meyer & Allen, 1984; Meyer, Allen, Paunonen, Gellatly, Goffin and Jackson, 1989) with a mean of 0.85 (Meyer & Allen. 1997). Meanwhile, in the Spanish version an alpha of 0.73 has been reported (González & Antón, 1995). In those studies the scale had 8 items, with 4 of them written in a negative manner.

8.1.4.3 Continuance Commitment

Tab. 24: Descriptive statistics of the continuous commitment scale

Item	N	Min	Max	Mean	SD
1rec*	256	1	7	3.2	1.8
4	256	1	7	4.0	1.9
8	256	1	7	3.9	1.9
13	256	1	7	5.4	1.5
15	256	1	7	4.8	1.8
18	256	1	7	4.2	1.7

** rec= the item was re-codified for this scale.*

Taking into account that the answers range from 1 to 7, continuance commitment of employees was around 4.5, the labels implying a range between "indifferent" and "slightly agree". With the exception of item 13 the remaining 5 items had a mean value between 3.9 and 4.8.

The adjusted goodness-of-fit indexes for the one-dimensional model were: $\chi^2 = 20.62$ df= 8,.GFI= 0.97, AGFI= 0.93, RMSR= 0.048. The regression coefficient for item rec_1 was – 0.08, without reaching a level of significance. Item rec_1 has been removed from the original scale for this reason, moreover it showed a low item-scale correlation.

Tab. 25: Reliability: Cronbach's α of continuous commitment scale

Scale	Item	α if the items is removed	Alpha
Continuance commitment	Rec_1	.76	0.6546
	4	.58	
	8	.53	
	13	.61	
	15	.54	
	18	.56	

The improvement of the internal consistency becomes evident by removing item rec_1 from the scale. As in Arciénega ‘s (2001) studies, the item was removed for this investigation.

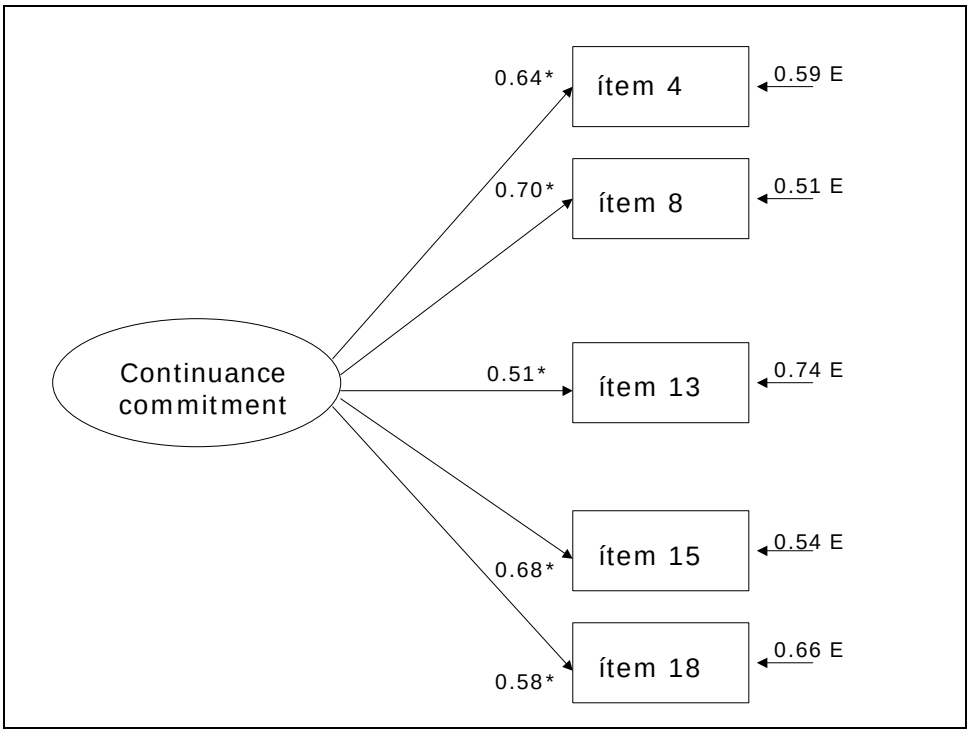

Fig. 4: Structure of continuous commitment scale. (5 items)

The removal of the item improved the adjustment indexes: χ^2 = 9.95 df= 5,.GFI= 0.98, AGFI= 0.95, RMSR= 0.032. With this modification, the regression coefficients of the 5 items, associated with continuous commitment, reached acceptable and significant levels (see Fig. 4). As for the affective compromise scale, Cronbach´s alpha was calculated with the purpose to compare the reliability of the applications done in other studies (see Tab. 25). The result was an α of 0.76. For continuance commitment Arciénega (2001) reports an α= 0.6743. In the English literature, a range of oscillation between 0.69 and 0.84 (Allen & Meyer, 1990; McGee & Ford, 1987; Meyer & Allen, 1984; Meyer et al., 1989) is found with a mean value of 0.79 (Meyer & Allen. 1997). In the Spanish literature, a value of 0.66 (González & Antón, 1995) is reported. In the affective commitment scale a satisfactory reliability with the 6 original items was achieved. In the case of the continuance commitment scale, only by removing item rec_1 Nunally´s cut-off criteria (1978) can be reached.

8.1.4.4 Normative Commitment

Tab. 26: Descriptive statistics of normative commitment scale.

item	N	Min	Max	Mean	SD
2	256	1	7	5.3	1.8
5	256	1	7	5.0	1.8
6	256	1	7	4.6	1.8
9	256	1	7	6.2	1.0
10	256	1	7	5.3	1.5
17	256	1	7	5.6	1.3

Taking into account that the range goes from 1 to 7, one can observe that, with the exception of item 6, the rest of the items reach a mean value exceeding 5. These items range from 5.0 to 5.6. Normative commitment follows affective commitment with close intensity.

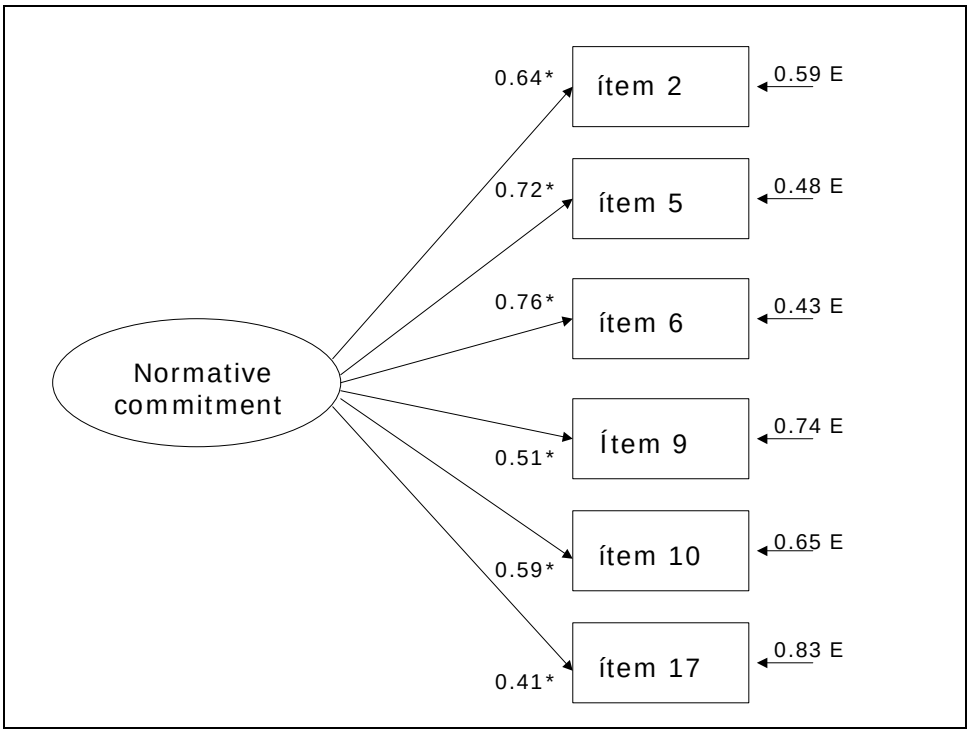

Fig. 5: Structure of normative commitment scale. (6 items)

The adjustment indexes for this one-dimensional structure, composed of 6 items, for the normative commitment scale resulted in low values: $\chi^2 = 15.78$ df= 8,.GFI= 0.98, AGFI= 0.95, RMSR= 0.035.

The goodness-of-fit values of the normative commitment scale are satisfactory, and since none of the items showed a behavior that would justify its removal, all the original items were maintained.

Tab. 27: Reliability: Cronbach's α of normative commitment scale

Scale	Item	α if the item is removed	Alpha
Normative Commitment	2	.74	0.7889
	5	.74	
	6	.73	
	9	.76	
	10	.76	
	17	.78	

Meyer and Allen, 1997 report reliability coefficients (α) between a range of 0.69 and 0.85 with a mean of 0.73 For comparison purposes, we calculated Cronbach´s alpha coefficients for this scale and found it to be equal to 0.78. Previous studies mentioned above used a scale of 8 items, some of which containing a negative connotation. Arciénega (2001) reports for this scale a Cronbach's alpha of 0.77.

According to the literature reviewed, my approach to the path questions and conforming to the general analysis of the instruments and their psychometric characteristics, the following assumptions are advanced.

8.2 Survey of further analysis

In the following section, relationships between transformational leadership and commitment are analyzed. Also relevant differences between the organizations with regard to size are characterized for the assumptions proposed above to be corroborated. It is expected that transformational leadership has a positive effect on commitment and experiences of employees at work. Positive effects on transactional leadership (contingent reward scale), are expected as well, if to a lesser degree. For Mbe and laissez-faire scales negative correlations are foreseeable.

8.2.1 Correlation analysis between transformational leadership and commitment

Transformational behavior has the objective of increasing identification and emotional closeness of employees. Higher levels of identification result in higher levels of commitment, of trust, loyalty, and performance (Avolio, 1999), which should have an effect on the relationship to the organization. Consequently, two commitment components are differentiated, namely, an affective and a calculated component. A positive correlation is expected to be found, especially for the affective component. The calculated component should turn out as independent of leadership behaviors.

The relation between transformational leadership and organizational commitment has been analyzed in several studies. Correlations of r=.39 were found (Barling et al. 1996; Mowday et al. 1982). Podsakoff et al. (1996) report correlations between transformational leadership and commitment between r=.20 und r=.34. Bycio et al. (1995) found even correlates of r=.45 between affective commitment and the charisma scale of transformational leadership. In regard to continuance commitment no correlates were found (r= -.03 --.06). This findings were replicated also by Felfe (2002) who reports correlates of r=.26 until r=.35 between affective organizational commitment and the transformational leadership scales. The strongest relation resulted for the IIa scale (Idealized influence attitude) with r= .31. No relations for continuance commitment and transformational leadership are reported.

Tab. 28: Correlations between the MLQ factors and the commitment scales

	Transformational leadership	**Transactional leadership**	**Affective commitment**	**Continuance commitment**
Transformational leadership				
Transactional leadership	.770**			
Affective Commitment	.261**	.190**		
Continuance Commitment	.020	.029	.431**	
Normative Commitment	.154*	.144*	.670**	.550**

** The correlation is significant with p<f 0.05*
*** The correlation is significant with p< 0.01*

Transformational leadership correlates higher with affective commitment than does transactional leadership (see Tab. 28). A correlation analysis yields a significant difference ($p<0.05$) between transformational leadership and affective commitment as against transactional leadership and affective commitment. No significant correlations between continuance commitment and leadership are observed.

In the case of normative commitment the correlations to leadership are significant but at a lower level than with affective commitment.

8.2.2 Correlation analysis of demographic factors

According to metaanalysis of Mathieu and Zajac (1990), age and position tenure correlate positively with continuance commitment. Educational level on the contrary correlates negatively with it. Schmidt et al. (1998) report also negative correlations between educational level and continuance commitment. Replicating these findings, the following analyses were carried out.

Tab. 29: Age and position tenure statistics in regard of affective and continuance commitment

	Age	**N**	**Mean**	**SD**
Continuance commitment	Younger than 30	62	4.25	1.38
	Older than 40	67	5.00**	1.09
Affective commitment	Younger than 30	62	5.50	1.18
	Older than 40	67	6.14**	0.77
	Position tenure	**N**	**Mean**	**SD**
Continuance commitment	Less than 3 years	150	4.39	1.24
	More than 3 years	85	4.82**	1.38
Affective commitment	Less than 3 years	150	5.81	0.95
	More than 3 years	85	5.91	0.95

*** The correlation is significant with p< 0.01*

Older employees show a higher mean of continuance commitment than younger employees. A comparative mean analysis shows a significant difference with $t(df) = -3.42(127)$ $p<0.01$. In the case of position tenure, employees that are more than three years in the organization are significantly more continuance committed than less position tenure employees $t(df)= - 2.4(233)$ $p<0.05$. Considering the correlations between continuance commitment, age and position tenure, the values are positive and significant with $r=.22$ and $r=.21(p<0.01)$ respectively (see Tab. 30).

Tab. 30: Correlation of commitment scales with age, position tenure and educational level

	Age	Position tenure	Educational level
Affective commitment	.26**	.10	-.17**
Continuance commitment	.22**	.21*	-.30**
Normative commitment	.22**	.12	-.19**

** The correlation is significant with p<0.05*
*** The correlations are significant with p< 0.01*

In this investigation, as in the literature reported above, a positive correlation was found between age , position tenure and continuance commitment. A higher correlation was also expected between both demographic criterions (age and position tenure) and continuance commitment than between the same criterions (age and position tenure) and affective commitment. Results from a multiple correlation show values from R= .262 and R= .259 respectively. A significant correlation difference was found only in the case of position tenure t(df) = 1.615 (235) p<0.05.

In the case of educational level results of this investigation match up with several studies. A negative correlation was found between educational level and continuance commitment. Results of correlation analysis show a significant difference with t(df) = 1.954 (235) p<0.01. The negative relation is significantly higher for continuance commitment than for affective commitment.

8.2.3 Correlation analysis of characteristics of the context

Some analyses have shown that leadership is essentially determined by characteristics of the context. Relevant variables were identified, such as job and structural characteristics, as branches and size of the institution. On the one hand, higher values are shown for transformational leadership in private organizations than in public ones, on the other hand, small companies show higher values for transformational leadership than bigger organizations (Felfe, 2002).

For further analysis and in order to respond to the proposed general assumptions, the sample has been divided in different groups in regard to the size of the organization. As mentioned above, small companies are expected to show higher values of transformational leadership than bigger organizations.

Tab. 31: Descriptive statistics of transformational leadership in small and big organizations

	Size of the organization	N	Mean	SD
Transformational leadership	Small	71	3.50	.90
	Big	167	3.61	.75
Transactional leadership	Small	71	3.40	.64
	Big	167	3.43	.66
Extra effort	Small	71	3.43	1.0
	Big	167	3.52	.87

Transformational and transactional leadership exceed the theoretical mean value of 3.0 in small and big companies. The transformational leadership mean value is a little higher than transactional means. Results of a comparative mean analysis show a significant difference of leadership perception only in big organizations $t(df) = 3.94\ (166)\ p<0.01$. Contrary to expectations, big companies in this sample perceive their leaders as more transformational than transactional. Results of a comparative mean analysis considering *both company groups* do not express a significant difference $t= -.67\ (236)\ p>0.01$.

Results of comparative mean analysis of extra effort do not report a significant difference between both groups $t= -\ 71\ (236)\ p>0.01$.

8.2.4 Correlation analysis of continuance commitment subscales

Considering previous work on the subject, employees with a high amount of continuance commitment stay in their respective organizations, being linked to them by investments made, the costs of leaving the organization and also because of a lack of alternatives. Felfe and Goihl (2002) mentioned that employees with a high amount of continuance commitment stay in their organization for good reasons. Rational reasons are recent investments or low alternatives. Their linkage is based on calculation including costs, investments and pay offs. De Frutos et al. (1998) investigated continuance commitment within Spanish samples, dividing the scale in two subscales, namely continuance costs and continuance alternatives. They analyzed a four factors model (affective, continuance costs, continuance alternatives and normative commitment). The fit index achieved a GFI of .96, a AGFI of .94 and a RMRS of .058. As mentioned above, continuance commitment reaches a value that exceeds the theo-

retical mean, namely 4.44 (Tab. 20). To analyze if continuance costs or continuance alternatives has more weight for employees in this sample, a comparative mean analysis was carried out.

Tab. 32: Statistics of continuance commitment subscales

	N	Mean	SD	Alpha
Continuance costs	256	4.81	1.4	.656
Continuance alternatives	256	3.85	1.6	.616

Contrary to expectations, continuance costs have a higher mean than continuance alternatives. The correlation between them is r=.575 significant with $p<0.01$. A comparative mean analysis result, shows a significant difference for the subscale continuance costs ($p<0.01$). Thus I assume that employees of the sample stay in the companies being linked to them in all probability by the costs of leaving their organization rather than by the lack of alternatives. Two elements are to be considered for future analysis: the reliability of both subscales, that do not reach the Nunnally criterion of .70 and the fact that the subscales are composed of three and two items respectively. Besides, it is also to be considered that the sample involves private industrial companies and the employees all had higher education. It is probable that the lack of alternatives is not perceived to be a real threat. Besides, the education level is more likely correlated to the affective dimension of commitment.

8.2.5 Hierarchical regression analysis for predicting affective and normative commitment

In the analysis of the augmentation effect the success criterion extra effort was assessed (see Tab. 14). Considering that transformational leadership correlates higher with affective and normative commitment than transactional leadership, hierarchical regression analysis was carried out to predict commitment.

Tab. 33: "Augmentation effect" for affective and normative commitment

Criterion	Model	Beta	R^2	Change in R^2
Affective commitment	1	-.027	.036	.036**
	2	.281	.068	.032**
Normative commitment	1	.061	.021	.021
	2	.107	.025	.005

***Significant with p<0.01 Model 1: Transactional leadership. Model 2: Transformational leadership. N=238*

Altogether deficits in explaining variance becomes evident in predicting affective and normative commitment. The increase of R^2 is significant only in the case of affective commitment. Although the correlation between transformational leadership and normative commitment is higher than between transactional leadership and normative commitment, the increase in the explained variance does not achieve a significant level. Still a clearly Beta weight of .281 shows up for transformational leadership in the prediction of affective commitment. A possible colinearity problem may arise, though not as a serious problem (index=18).

8.2.6 Hierarchical Regression analysis for predicting continuance commitment

Beyond leader behaviors, other factors as job conditions, organization and position tenure play an important role for organizational commitment. A positive correlation is expected over the calculated component, whereas the affective dimension is predicted more likely by transformational behaviors.

Considering that leadership behaviors exert influence more likely on affective commitment whereas continuance commitment should be predictable by age and position tenure, regression analysis was carried out.

Tab. 34: Regression analysis for commitment scales. Predictors: Transformational leadership, age and position tenure

	Affective commitment (Beta)	Continuance commitment (Beta)	Normative commitment (Beta)
Transformational Leadership	.249*	-.008	.209*
Age	.302*	.266*	.234*
Position tenure	-.042	.066	.047

*N=238 * Significant with p<0.05*

The analysis of beta values shows that affective commitment is predictable more likely by age and transformational leadership with a significance value of $p<0.05$. Continuance commitment on the contrary, is more likely predictable by age and position tenure, nevertheless significant beta values appear only concerning age. Finally, normative commitment similar to affective commitment is predictable by age and transformational leadership, however only at lower levels, while the highest beta weight comes from transformational leadership .249 predicting affective commitment (see Tab. 34).