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## Employee Impact and Psychological Toughness on Company Results

Assessment of mental toughness makes possible the measurement and comparison of attitudes that determine organizational success. This is especially true of a difficult and competitive environment. In Poland, this first-time research conducted by 4business&people Sp. z o.o. [Ltd.], an implementation oriented company, delivered valuable information about the employee population. The study was carried out using Mental Toughness Questionnaire 48 (AQR Ltd.), a tool created at the University of Hull in 2002. The study includes many interesting relations among mental toughness of employees and their position in the organizational structure, gender differences, and discrepancy between administrative and sales positions.

Mental toughness measurements find valuable business application in many different areas—recruitment and selection, success, talent management, basis development, coaching effectiveness measurement, change management, and professional burnout prevention.

### Introduction

This research was conducted by 4business&people Sp. z o.o. [Ltd.], an implementation oriented company, in the first quarter of 2007. The team, consisting of Katarzyna

Kloskowska–Kustoszczyk, Katarzyna Lorenc, Iwona Kowalska, and Klaudia Jurewicz, looked into the following research areas:

- Determining the meaning of metal toughness in Polish organizations for different positions in the organizational structure (director, manager, worker, student),
- Finding similarities and differences between males and females in specific positions (director, manager, worker, student),
- Indicating similarities and differences among rank and file employees filling administrative and sales positions,
- Determining similarities and differences between males and females filling sales positions.

### Measurement Method – MTQ48

MTQ48 (Mental Toughness Questionnaire 48) was used to measure mental toughness. This tool was created by Dr. Peter Clough, Dean of the Department of Psychology at the University of Hull, in collaboration with AQR Ltd. on the basis of the mental toughness model. The model was assembled in 2004 as a result of contemporary research described in literature [S.C. Kobas, 1979; J. G. Dyer, T. McGuinness, 1996] as well as the observations of J. E. Loehr [Loehr, J. E. 1994], a sports psychologist working with athletes, who described the connection between the phenomenon of mental toughness and achieving top form and excellent results in 1997. However, he conducted no research with the aim of confirming preliminary observations.

A total of 963 individuals completed the questionnaire in order to verify the theoretical model. The group consisted of 619 students, 136 managers, 42 engineers, and 166 athletes.

Males constituted 35.1% of the group, females 39%, 25.9 % did not state their gender. The data were entered into SPSS software. Analysis involved principal components applying varimax rotation where eigenvalues greater than one were accepted. Six factors had eigenvalues greater than one, which together accounted for 62.7% of the variance. Only factor loadings above 0.3 were acknowledged. Ultimately, the procedure made possible the determination of key factors constituting mental toughness. These are:

- **Challenge** – 8 questions (factor loadings ranged from 0.339 to 0.625), where 15.1% accounted for the variance in mental toughness.
- **Commitment** – 11 questions (factor loadings ranged from 0.316 to 0.692), where 11.3% accounted for the variance in mental toughness.
- **Life control** – 7 questions (factor loadings ranged from 0.412 to 0.609), where 13.5 % accounted for the variance in mental toughness.

Table No. 1. MTQ48 Reliability

MTQ48 Sub Scales	No. of items	Cronbach's alpha
<i>Challenge</i>	8	0.71
<i>Commitment</i>	11	0.80
<b>Control</b>	<b>14</b>	<b>0.74</b>
<i>Emotional Control</i>	7	0.70
<i>Life Control</i>	7	0.72
<b>Confidence</b>	<b>15</b>	<b>0.81</b>
<i>Confidence in Abilities</i>	9	0.75
<i>Interpersonal Confidence</i>	6	0.76
Whole scale	48	0.91

Source: AQR Ltd. Study

- **Emotional control** – 7 questions (factor loadings ranged from 0.376 to 0.702), where 7.4% accounted for the variance in mental toughness.
- **Confidence in abilities** – 9 questions (factor loadings ranged from 0.397 to 0.606), where 9.3% accounted for the variance in mental toughness.
- **Interpersonal confidence** – 6 questions (factor loadings ranged from 0.432 to 0.690), where 6.1% accounted for the variance in mental toughness.

The MTQ48 has an overall test–retest coefficient of 90%, with an internal consistency of the subscales presented in the table below.

All subscales reached the minimum acceptable level of 70% as recommended by Kline [Kline, 1999]. This supports the homogeneity of each subscale and of the MTQ48 as a whole.

Further tests indicate significant relationships between these results and PREVUE personality tests in the following scales:

- **Submissive – Assertive** – correlation with MTQ48 significant at 0.01 – 0.382
- **Self sufficient – Group oriented** – correlation with MTQ48 significant at 0.05 – 0.242
- **Reserved – Outgoing** – correlation with MTQ48 significant at 0.01 – 0.387
- **Restless – Poised** – correlation with MTQ48 significant at 0.01 – 0.377
- **Excitable – Relaxed** – correlation with MTQ48 significant at 0.01 – 0.478

The remaining correlations obtained with different tests are shown below.

**Table No. 2.** MTQ48 Results Correlation with Different Scales

	<b>Pearson’s correlation</b>	<b>Scales</b>
<b>Optimism</b>	0.48	Life Orientation Test
<b>Life Satisfaction</b>	0.56	Satisfaction with Life Scale
<b>Self-Image</b>	0.42	Self-Esteem Scale
<b>Self-Efficacy</b>	0.68	Self-Efficacy Scales
<b>Trait Anxiety</b>	0.57	State-Trait Anxiety Questionnaire

Source: AQR Ltd. Study

Adaptation to Polish conditions followed the stages described below:

1. Parallel translation of the tool by three independent translators coupled with discussions on the final version,
2. Reverse translation with proofreading,
3. Comparing the results of Poles and the British, where only differences due to language flexibility were found in several factors, but where the differences did not influence the final results achieved in the test.

The MTQ48 Questionnaire is a commercial scale utilized by both the private and public sectors. It is completed on-line. After sending in their application, participants receive a code enabling them to log in on the website. Once the introductory section of the test is completed (with information about gender, age, country of origin, race, and personal data enabling the forwarding of the report) the participant starts completing the questionnaire. Participants can correct their answers and easily “wander” among five windows where successive questions appear. An answer scale is shown during work on completion. The questions concern the behavior of the subject, who answers by indicating a number (1– I strongly disagree, 2 – I disagree, 3 – It is hard to say, 4 – I agree, 5 – I strongly agree). Raw points are converted into stens. The sten scale, from 1 to 10, corresponds to normal distribution, which means that 68% of results are situated between the 4th and 7th stens.

The test is constructed in line with all directives approved by the British and American Psychological Societies for psychometric tests (*concurrent validity* – 0.42 with tolerated validity at 0.30, and *reliability* – 0.90 with tolerated reliability at 0.70). It is the high credibility and quality of the MTQ48 that led to its recommendation by the British Institute of Leadership and Management as a tool for organizational measurement.

### Description of the Subjects

The tests of general mental toughness covered a sample group of 433 people from fifty different organizations. The group selection may be characterized as purposeful and random. A group of companies was selected first—big and medium entities (with Polish and foreign capital) that were invited to participate in the research. Next, participants volunteered from within the chosen organization. Anonymity of individual results was secured. The average number of participants from one organization amounted to ten.

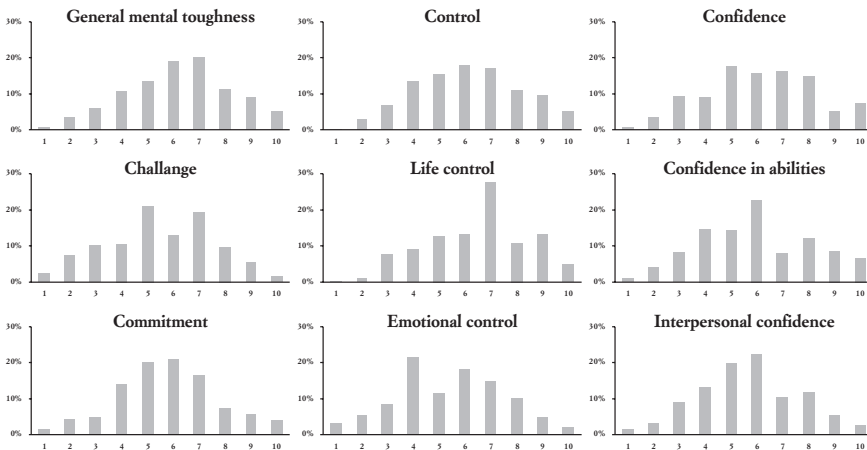
The research covered people employed in different sectors and occupying different positions. The sample group consisted of persons filling the following posits: directors – 12%, managers – 19%, rank and file employees – 49%, and students – 20%. Most individuals were connected with the following sectors: 33% – finance, banking, and insurance, 6% – chemistry and cosmetics, 5% – the automotive industry, IT, energy, and FMCG.

This research of a continuous character. For this reason, results should be treated as initial ones creating the basis for further professional observations and analyses.

### Result Distribution

The achieved results are clearly differentiated at both the level of the main analyzed measure—general mental toughness—and the characteristics describing it. Extreme results on a 1–10 scale appeared in the case of each feature. The distribution of general mental toughness is similar to a normal distribution. However, a slight left-sided asymmetry of the distribution is noticeable. This is borne out by an average 6.2 and the dominant at a level of seven.

**Chart No. 1.** Distribution of tested features results on a 1–10 scale.



Source: Private study on the basis of research.

A total of 25% of subjects achieved a result of general mental toughness that may be perceived as unusual, as it deviates from the average by over one standard deviation. A total of 11% individuals were assessed as having general mental toughness at the level of 1–3. Our extensive coaching experience allows us to claim that there is a relationship between poor results and professional burnout. However, verification of these assumptions requires further research. The group consisted of 6% of all tested directors, 10% of managers, and 8% of rank and file employees. Results at the 1–3 level were achieved by 12% of all tested females and 7% of males. On the other hand, 15% of the subjects achieved results of 9–10, which leads to the conclusion that they have very high mental toughness. This group encompasses 28% of all tested directors, 12% of managers, and 15% of rank and file employees. A total of 20% of tested males achieved very high results; there were 12% of females in this group.

Average scores resulting from an assessment of factors determining mental toughness are similar. However, attention should be paid to the fact that the ability to control emotions scored at the lowest level (5.4 points) and life control at the highest (6.5 points). Analysis of the correlation indicates that the tested group features confidence, commitment, and life control, which determine general mental toughness.

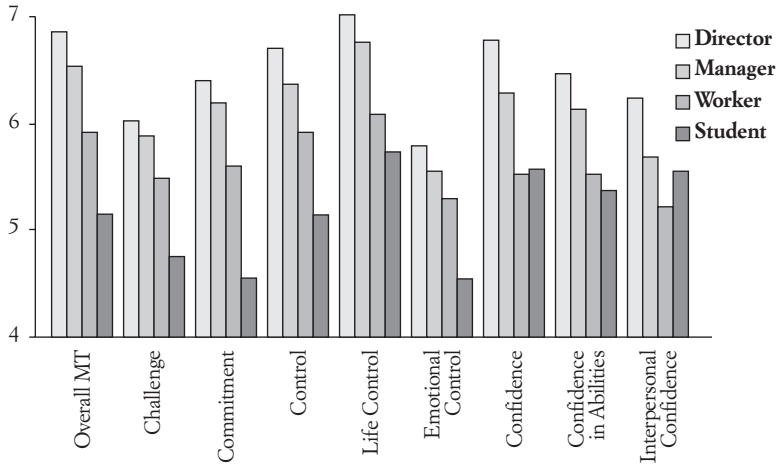
### Mental Toughness in Different Positions

This research study proves that promotion in an organization is determined by the individual mental toughness level. Moreover, organizations are coupled with authority-building and a sense of agency behavior on the individuals from the top management. The results achieved by such individuals tend to be higher in all tested dimensions determining general mental toughness. Average scores for directors are higher than the ones for managers (although the differences are not statistically significant) and rank and file employees (here the highest statistically significant difference is at a level of 5% and concerns self-esteem). The results of manager assessment are situated between the results of rank and file employees and those of directors. However, it should be stressed that the mental toughness of managers is not significantly different from the mental toughness of rank and file employees.

Exceptionally low levels of mental toughness were observed within the group of students, where the average indication of mental toughness amounted to 5.2, while it was 6.2 in the population. Lower results were not limited to the area of self-esteem and interpersonal confidence. The results of tested students were not only significantly lower than those ones of directors and managers, but also lower than those of rank and file employees.

The difference between rank and file employees and their supervisors lies in employee lack confidence in relations with others, difficulties in finding independent and ef-

**Chart No. 2.** General mental toughness and its shaping factors in terms of position in the organization.



Source: Private study on the basis of research.

fective ways to achieve goals. For this reason they need support in the form of procedures and instructions. They also have less confidence in the possibility of influencing things that happen in their life.

### Mental Toughness of Males and Females

In order to avoid generalizations, differences between genders were deeply analyzed with allowance of an important feature, from the point of view of mental toughness—professional position in specific organizations.

Differences between genders are visible in certain positions. It must be emphasized that gender is not an indicator of general mental toughness level in different positions. Nevertheless, varying levels were seen in other examined dimensions.

Basic conclusions are presented below:

- Both male and female directors scored the highest in the feeling of life control, while emotional control scored the lowest among female directors (the result is significantly lower than the one of males at the level of significance – 10%) and male directors achieved the lowest results in the area of challenges (the result is significantly lower than the one of females at the level of significance – 10%).
- Females were less prone to withstand emotions—emotional control—where especially significant differences were observed among rank and file employees; substantial differences also appeared in the groups of directors, managers, and students.

- The greatest differences between the genders definitely concern rank and file employees—females describe their control, self-esteem, and confidence in abilities as much lower (significant differences at the assumed significance level of 10%); the greatest difference is observed in the ability mentioned above—emotional control.
- Differences in mental toughness are also visible among students with control as the basic differentiating feature (apart from emotional control), where both features have distinctly lower scores in the case of female students.

Moreover, worth emphasizing is the difference between females and males who are promoted. A female director has much higher general mental toughness than a female who is a rank and file employee. Significant differences also appear in connection with challenges and self-esteem. In the case of male promotion, it is not connected with a higher assessment of mental toughness and less difference is demonstrated between positions. The greatest growth in females is observed in the area of challenge, while in males it is in control. It should be emphasized that research into the British population did not indicate statistically significant differences between genders.

### Mental Toughness of Sales Representatives

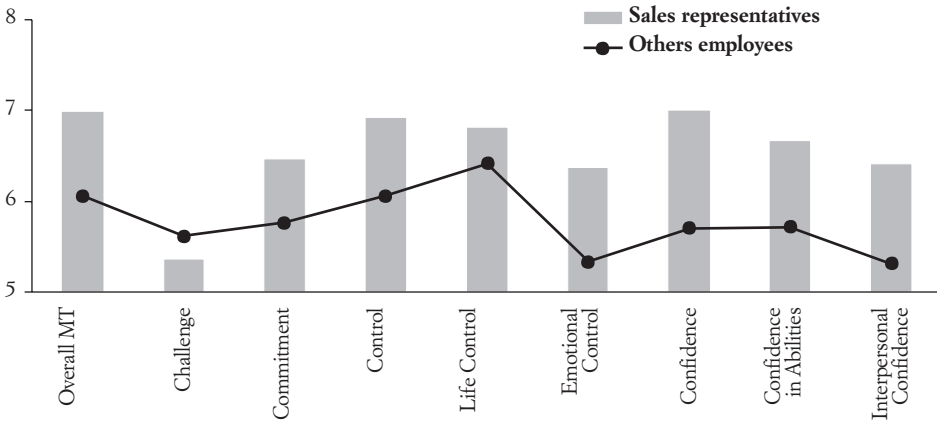
The MTQ test was carried out on a group of fifty-six sales representatives – 57% (32) of whom were females. The group was examined with the aim of developing a profile of an effective salesperson. The current stage of research does not yet allow the drawing of any conclusions in this area. However, a sales representative profile may be compared with other rank and file workers.

The mental toughness of salespeople is significantly higher than that of other employees. Statistically significant differences fail to appear only in the case of two features—challenge and life control. These results could be explained by the fact that sales representatives have clear sales goals and tend to complete set tasks. Differences in the results of sales representatives and rank and file employees were also verified using Chi-square goodness-of-fit test, which showed that the goodness-of-fit hypothesis was rejected for the following features: control, emotional control, self-esteem, and interpersonal confidence.

The data received also leads to the following conclusions:

- A male sales representative does not differ from all males in rank and file positions in any respect;
- Female sales representatives are characterized by greater mental toughness than other rank and file female employees; the research shows no difference in only the area of challenge and life control;

**Chart No. 3.** General mental toughness and its shaping factors among sales representatives and other rank and file employees.



Source: Private study on the basis of research.

■ Results achieved by female sales representatives are in no way statistically different from the ones achieved by male sales representatives in any of the nine areas.

## Conclusions

This analysis shows that mental toughness significantly differentiates individuals in different positions within an organization. Detailed studies prove that the profile of a female who is promoted is considerably different from the profile of a male. Research into mental toughness also revealed significant differences between the participating companies.

Moreover, being the key issue in the case of employees, mental toughness is a factor determining employee effectiveness.

The study of sales representatives is aimed at creating a profile of an effective salesperson. The authors plan detailed research in other sectors.

At present, MTQ48 may be applied as an accelerator for the coaching process as well as a way to measure its efficiency, a tool in professional burnout prevention, in planning succession and selecting talents, and finally, in the recruitment process as a pre-selective and selective test.

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