

Motivation Questionnaire

> User Manual



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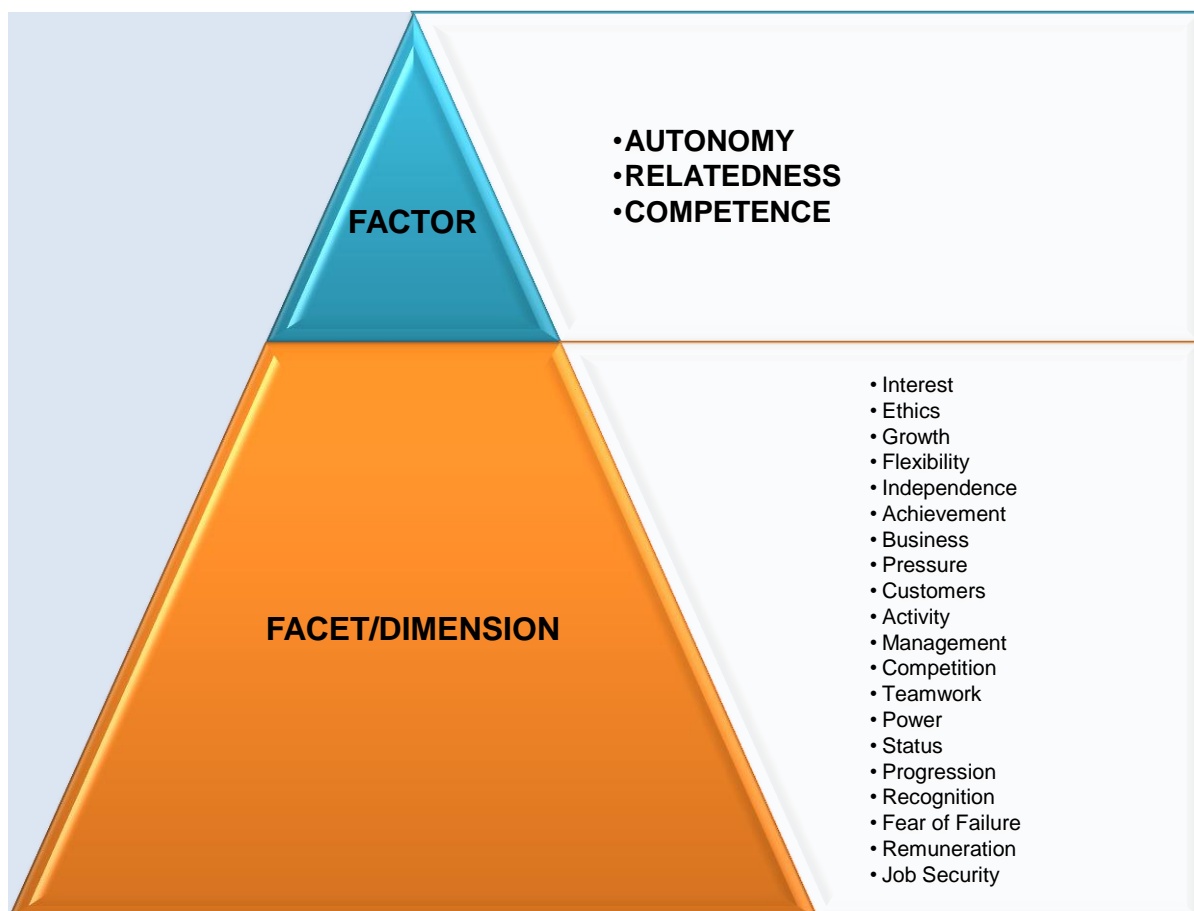
1. Introduction

This User Manual gives an overview of the application, administration, interpretation and reliability and validity of the MQ motivation assessment test. Evidence for the reliability and validity is presented against some of the key the criteria in the EFPA Review Model for the Description and Evaluation of Psychological Tests (Bartram, 2002). The EFPA Review Model was produced to support and encourage the process of harmonizing the reviewing of tests. It provides a standard set of criteria to assess the quality of tests. These cover the common areas of test review such as norms, reliability and validity.

1.1 Purpose of MQ

The MQ questionnaire was designed to throw light on what motivates and demotivates people at work. The MQ motivation model is based on twenty motivation dimensions that occur repeatedly in the literature on motivation. These cover key areas in motivation frameworks including the three key areas of Ryan and Deci's (2002) Self-Determination Theory--Autonomy, Relatedness, and Competence (Figure 1).

Figure 1. MQ Concept Model of Motivation



1.2 What the MQ Measures

The MQ requires a test taker to rate how far different work-related issues affect how motivated they feel using a five-point Likert scale ranging from “Greatly increases” to “Greatly reduces.” The questionnaire consists of 120 statements (6 items per scale). Most test takers complete the test in about 10 minutes. Table 1 defines what each of the MQ motivation scales measure.

Greatly increases	Tends to increase	Has no effect	Tends to reduce	Greatly reduces
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Example Item

Having the freedom to try out my own ideas

The MQ also measures an individual’s satisfaction with their current work by asking them to evaluate how far their current job meets different motivation needs and demands.

Very great extent	Great extent	Moderate extent	Some extent	Not at all
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Example Item

Having a lot to do, being on the go, staying busy all the time.

These items are used to evaluate the extent to which the respondent’s current job position matches their motivation needs and preferences.

1.3 Development of the MQ

The development of the MQ took place in several distinct phases.

Phase 1. The first development phase comprised a literature review. The purpose of the review was to gather information to help build a rich picture of the things that tend to motivate and demotivate people at work. The information was gathered from a range of sources including books, magazines, academic articles, websites, and blog posts. The output from the literature review was a list of possible motivational issues and factors recorded on a spreadsheet. These were transcribed onto cards.

Phase 2. In the second phase, our goal was to create a draft motivation framework. We used open card sorting to generate possible motivation categories and elements which were transcribed onto spreadsheets. After numerous iterations, the output from this work stream was a motivation framework covering twenty areas with each area having six elements.

Phase 3. In the third phase of the development of the inventory, we transformed the motivation framework into the format of a typical behavioral style assessment test, and made this available on our website as a free online assessment with a basic feedback report. In the online questionnaire, the motivation elements are presented in random order, and respondents rate their importance using the five-point rating scale above.

After completing the assessment, respondents were asked to complete a personal details form that covered gender, age, ethnicity, nationality, employment, and job performance. We analyzed data from the free assessment at regular intervals using reliability analysis, and made changes to items in order to improve the reliability and factor structure of the scales.

We conducted Exploratory Factor Analysis (EFA) of the motivation scales and the initial analyses with the extraction of factors based on eigenvalues over 1 produced a four-factor solution. This was reported in the first version of the user manual and the first version of the feedback report. The first commercial version of the MQ was published as an online assessment in 2004 on MySkillsProfile's e-testing platform.

Table 1. MQ Motivation Scales

Dimension	Definition
Interest	Varied, stimulating and creative job objectives and work activities.
Ethics	Working in accordance with ethical standards and personal principles.
Growth	Opportunities to acquire new knowledge and skills, reach personal potential.
Flexibility	Accommodating bosses, hours and working conditions.
Independence	Freedom and discretion to decide how to carry out work.
Achievement	Testing job objectives, demanding responsibilities, new challenges.
Business	Working in the business sector rather than public service.
Pressure	Handling competing priorities, facing tight deadlines, managing setbacks and stress.
Customers	Dealing directly with customers and suppliers, handling problems and feedback.
Activity	Having a lot to do, being on the go, staying busy all the time.
Management	Supervising other people's tasks, performance and personal development.
Competition	Working in a competitive environment, striving to be the best, wanting to win.
Teamwork	Operating as part of a team rather than as an individual contributor.
Power	Being in charge, exercising control, having responsibility for people and resources.
Status	Deriving standing and feelings of importance from work and job seniority.
Progression	Opportunity to continually advance to more senior positions.
Recognition	Acknowledgment by bosses and colleagues of efforts, skills and competencies.
Fear of Failure	Not wanting to let self and others down, being able to prove others wrong.
Remuneration	Opportunity to boost earnings related to job performance.
Job Security	Secure, permanent and reliable job position.

Phase 4. In 2014, we carried out a review of the MQ. Our goal was to update the user manual for review, and publish a new feedback report with practical tips and suggestions for performance improvement. Exploratory Factor Analysis (EFA) was carried out following best practice identified by Costello and Osborne (2005). Instead of using eigenvalues over 1 as the determining factor, we examined the graph of the eigenvalues and carried out three, four, and five-factor extractions.

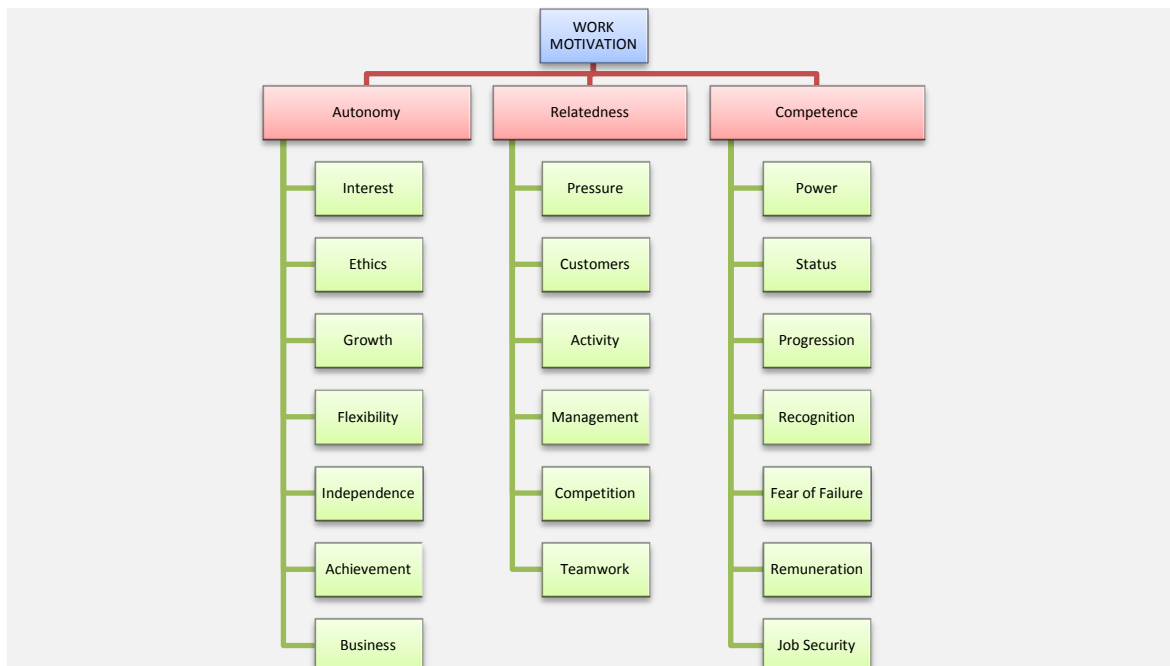
We judged that a three-factor solution had the “cleanest” factor structure judged by the strength of loadings and the number of cross-loadings on each factor--that is, item loadings of at least 0.45, few item cross-loadings, and no factors with fewer than three items. The pattern of loadings on the factors led us to conclude that the three factors were related to the three key areas of Self-Determination Theory. Chapter 5 provides details of the three-factor solutions.

It is important to recognize that many of the motivation factors and elements that the instrument assesses are not unique to the MQ, and the motivation characteristics that they capture can be seen in other motivation models and measures.

1.4 Model of Work Motivation

Figure 2 shows the MQ factor model of work motivation that emerged from EFA. The scales shown under each factor are those that loaded at 0.3 or higher in the rotated component solution.

Figure 2. Three Factor Model of Work Motivation



Autonomy. Seven scales load on the Autonomy factor. According to Ryan and Deci, Autonomy concerns the experience of acting with a sense of choice, will, and self-determination. When people are intrinsically motivated through Autonomy, they feel they have options and choices, and the opportunity to carry out their work activities in different ways. They do not feel controlled or compelled by their managers or team mates to do things in certain ways. Autonomy leads to “sustainable motivation”, according to Ryan and Deci,

because it emerges from one's sense of self, and it produces feelings of willingness and engagement.

Respondents who have high scores on the MQ Autonomy factor are motivated when they feel they have interesting work; they work in accordance with ethical standards and personal principles; there are opportunities to acquire new knowledge and skills; there are accommodating bosses, hours, and working conditions; there is freedom and discretion to decide how to carry out work; and, they face testing job objectives, demanding responsibilities, and new challenges. People who score high on the MQ Autonomy factor also display a slight preference for working in the business sector rather than public service.

Relatedness. According to Self-Determination Theory, Relatedness is the experience of having satisfying and supportive social relationships at work and outside it. The MQ Relatedness factor is a broad factor that measures many different characteristics of relationship interaction and affiliation. People who get high scores on this factor like having a lot to do, and having to manage pressure and stress; they enjoy dealing with customers and suppliers; they get satisfaction from being in management and leadership positions and being responsible for people; they are motivated by the opportunity to compete against their peers; and, they prefer to operate as part of a team rather than as an individual contributor.

Competence. In Self-Determination Theory, Competence is the belief that one has the ability to influence important outcomes. The MQ Competence factor measures seven dimensions that contribute to how able, capable, and competent people feel. People who obtain high scores on this factor are people who enjoy being in charge and having power and status; work gives them standing and makes them feel respected; they value the opportunity to advance to more senior positions; acknowledgment by bosses is important to them; succeeding and not failing in front of their peers matter to them; and, they prefer it when earnings are related to performance. They also have a slight preference for employment that is secure/permanent.

1.5 Job Performance

A key success criterion for any occupational measure is whether the results help predict job performance. There is a large body of evidence about the contributions of general mental ability (GMA), personality, and experience to job performance. For example, Schmidt and Hunter (2004) report that GMA correlates above 0.5 with job performance, personality correlates at about 0.3, and experience correlates at about 0.2. There is much less data about the impact of motivation factors such as autonomy, relatedness, and competence on job performance.

At the end of the online questionnaire, there is an optional form where respondents are asked to provide information about their job performance. Respondents are asked to assess their performance over the last year using a four point scale from *excellent* to *unsatisfactory*. Using the same scale, respondents are also asked to report how their line managers rated their performance. We used this information to look at the relationship between the MQ scales and job performance.

Our analysis suggests that motivation needs and preferences predict the types of jobs people seek and how they perform, but the impact is modest in comparison to the effects of GMA, and less significant than the effects of personality and experience.

2. Applications and Administration

2.1 Applications

The MQ questionnaire is suitable for a range of assessment and development applications including selection, coaching, training, team building and career counselling.

Selection. MQ interpretive reports about a candidate's motivation preferences provide a structure for interviewers to discuss a candidate's work style and potential strengths and weaknesses. In competency-based selection, the MQ model provides a framework of three key areas and twenty motivation dimensions to compare candidates against and use as the foundation for a competency-based interview.

Assessment and development centers. The MQ profiles also provide a source of information about a candidate's motivation preferences to put alongside information from in-tray and group exercises. The interpretive reports provide practical tips and suggestions for performance improvement for participants to consider alongside feedback from assessors.

Training and development. The MQ can help in the development of a company's existing staff in individual and group development contexts. The MQ profile provides a structure for a member of staff and their line manager, mentor, trainer, or coach to explore strengths and development needs. The development section of the interpretive report and downloadable guide provide practical ideas and suggestions for learning and development for trainees to consider.

Team building. Sharing of MQ profiles can help teams to understand the range of interests and motives that the team possesses and how these might be deployed in projects. The creation of a MQ team profile may also reveal gaps in the team's capability and help identify suitable team development activities.

Coaching and counselling. The MQ interpretive report provides a structure for a coach to explore a client's preferred motivation preferences and work style. The feedback report identifies areas of work that the client finds motivating and those areas that the client may be finding daunting and be struggling with.

2.2 Administration

It is important that people who are asked to take the MQ assessment test understand the purpose and process. Test takers typically want to know what the test measures, how it will be used, whether they will see their results, and who else will have access to their profiles. This information could be provided as part of a broader briefing about the assessment context, or it could be sent out with the invitation email to the online assessment session.

The MQ can only be administered online via MySkillsProfile.com. The service for individual customers provides a direct access service for individuals to take the questionnaire, pay for

the assessment by credit card, and download (or receive via email) the interpretive report in PDF format.

The corporate testing service works in a similar fashion except that test takers bypass the payment element, and test administrators have the option of determining how feedback reports are handled. The feedback handling options are that interpretive reports are sent to a) the test administrator, b) the test taker, or c) both the test administrator and test taker.

2.3 Norming

In order to interpret MQ raw scores, we compare an individual's results against an international comparison group of people who have answered the questionnaire. The international comparison group is referred to as the norm group or standardization sample, and the comparison generates a normative Standard Ten Score (sten) for each scale as described below. Chapter 5 gives information about the composition of the norm group. The collection of norms from different countries is an ongoing process, and additional norm tables will be added as required.

2.4 Good Practice

Occupational test users must be aware of the implications of employment law for psychometric test use. Test users have an ethical responsibility for the welfare of test takers. When people feel they have been treated fairly, they will leave the test session with a good impression of testing and the testing organization. Fair testing also has an important technical impact. If performance on the test is influenced by anything other than the attribute being measured, the accuracy and relevance of the results will be reduced.

3. Scale Descriptions

3.1 Overview

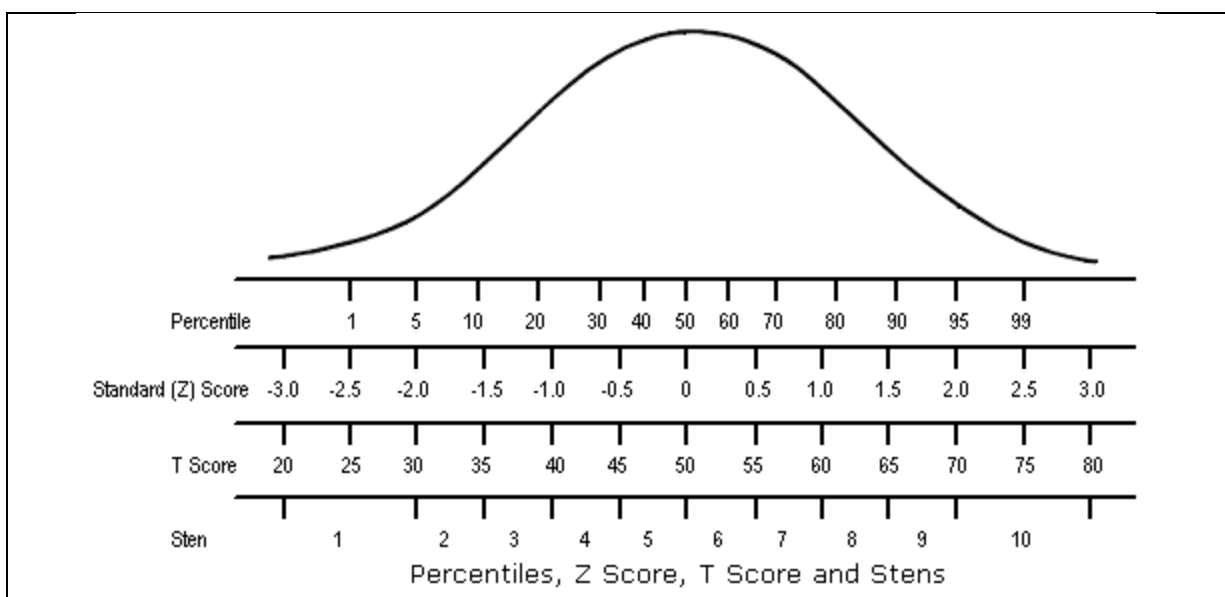
This chapter presents information on each of the MQ scales. For each scale, information is presented about how to interpret high, medium, and low scores. This includes brief descriptions of the meaning of scale scores, examples of questionnaire items, and an indication of the relationship between the scales and other scales in the questionnaire.

In the profile sheet and computer-generated report, test takers' scores are reported on the Sten (standard ten) scale that provides a scale of 10 points. Figure 3 shows how the Sten scale and other commonly used scales map onto the normal distribution curve. The MQ provides two levels of interpretation: factor scores refer to broad domains which are multi-faceted, and facet scores refer to more narrowly focused dimensions which are facets of the broad domains.

3.2 Interpreting Scores

The scales measure motivation needs and preferences that are normally distributed within the general population. Normalized Sten scores are used as the standard scale. The average range on a Sten scale is from 4 to 7 and 68% of people score in this range. Scores outside the average range are indicative of aspects of style where the respondent is likely to be different from most people. Whether these points of difference are an asset or a liability will depend on the situation within which the person is operating.

Figure 3. Sten Scale and its Relationship with the Normal Distribution Curves and Other Scales



It is important to note that the scales are a measure of normal motives and not intended for the diagnosis of clinical problems. A person may score at one of the extreme ends of a number of scales and will still be normally adjusted (although some extreme scores may suggest characteristics that are less comfortable for the person or those around them).

When interpreting factor scores, especially middle range ones, it is important to look at the pattern of trait scale scores. It is unwise to assume that a middle range factor score implies that the candidate also has middle range scores on each of the scales that make up the factor. Similarly, two people may score equally high on a factor, for example, Autonomy and yet be different in the behavioral expression of their high Autonomy. The expression of the underlying factor is described by the scores on the individual scales that relate to it.

Scale	Page
Interest	13
Ethics	14
Growth	15
Flexibility	16
Independence	17
Achievement	18
Business	19
Pressure	20
Customers	21
Activity	22
Management	23
Competition	24
Teamwork	25
Power	26
Status	27
Progression	28
Recognition	29
Fear of Failure	30
Remuneration	31
Job Security	32

Key Area 1. Autonomy

Scale 1. Interest

High Scorers

Description

Are motivated by varied, stimulating, and creative job objectives and work activities.

Example positive item

Being able to do interesting work.

Moderate Scorers

Description

Are moderately motivated by varied, stimulating, and creative job objectives and work activities.

Or

Are as motivated as most other people by varied, stimulating, and creative job objectives and work activities.

Low Scorers

Description

Are not motivated by varied, stimulating and creative job objectives and work activities.

Example negative item

A job that does not require me to think.

Relationships with Other Scales

Strongest correlations

Ethics
Growth
Flexibility
Independence
Achievement
Business

Key Area 1. Autonomy

Scale 2. Ethics

High Scorers

Description

Are motivated by being required to work in accordance with ethical standards and personal principles.

Example positive item

Working in accordance with ethical standards and personal principles.

Moderate Scorers

Description

Are moderately motivated by being required to work in accordance with ethical standards and personal principles.

Or

Are as motivated as the next person by being able to work in accordance with ethical standards and personal principles.

Low Scorers

Description

Are not motivated by being required to work in accordance with ethical standards and personal principles.

Example negative item

Being asked to cover up mistakes.

Relationships with Other Scales

Strongest correlations

Interest
Growth
Flexibility
Independence
Achievement
Business

Key Area 1. Autonomy

Scale 3. Growth

High Scorers

Description

Are motivated by opportunities to acquire new knowledge and skills, and reach their personal potential.

Example positive item

Having a job that provides development opportunities.

Moderate Scorers

Description

Are as motivated as the average person by opportunities to acquire new knowledge and skills, and reach their personal potential.

Or

Are motivated to some degree by opportunities to acquire new knowledge and skills, and reach their personal potential.

Low Scorers

Description

Are not motivated by opportunities to acquire new knowledge and skills, and reach their personal potential.

Example negative item

Not being able to grow and develop.

Relationships with Other Scales

Strongest correlations

Interest
Ethics
Flexibility
Independence
Achievement
Business

Key Area 1. Autonomy

Scale 4. Flexibility

High Scorers

Description

Are motivated by accommodating bosses, hours, and working conditions.

Example positive item

Having a flexible boss.

Moderate Scorers

Description

Are motivated to a moderate extent by accommodating bosses, hours, and working conditions.

Or

Are as motivated as the next person by accommodating bosses, hours, and working conditions.

Low Scorers

Description

Are not motivated by accommodating bosses, hours, and working conditions.

Example negative item

Not having flexible work arrangements.

Relationships with Other Scales

Strongest correlations

Interest
Ethics
Growth
Independence
Achievement
Business

Key Area 1. Autonomy

Scale 5. Independence

High Scorers

Description

Are motivated by freedom and discretion to decide how to carry out work.

Example positive item

Having the freedom to try out my own ideas.

Moderate Scorers

Description

Are motivated to a moderate extent by freedom and discretion to decide how to carry out work.

Or

Are as motivated as the average employee by freedom and discretion to decide how to carry out work.

Low Scorers

Description

Are not motivated by freedom and discretion to decide how to carry out work.

Example negative item

Not being able to try out my ideas.

Relationships with Other Scales

Strongest correlations

Interest
Ethics
Growth
Flexibility
Achievement
Business

Key Area 1. Autonomy

Scale 6. Achievement

High Scorers

Description

Are motivated by testing job objectives, demanding responsibilities, and new challenges.

Example positive item

Being expected to achieve results.

Moderate Scorers

Description

Are quite motivated by testing job objectives, demanding responsibilities, and new challenges.

Or

Are as motivated as most of their peers by testing job objectives, demanding responsibilities, and new challenges.

Low Scorers

Description

Are not motivated by testing job objectives, demanding responsibilities, and new challenges.

Example negative item

Not having challenging targets.

Relationships with Other Scales

Strongest correlations

Interest
Ethics
Growth
Flexibility
Independence
Business

Key Area 1. Autonomy

Scale 7. Business

High Scorers

Description

Are motivated by working in the business sector rather than public sector.

Example positive item

Working in an enterprising business.

Moderate Scorers

Description

Are slightly more motivated by working in the business sector rather than public sector.

Or

Are motivated to some degree by working in the business sector rather than public service.

Low Scorers

Description

Are not motivated by working in the business sector rather than public sector.

Example negative item

A job which did not have a commercial focus.

Relationships with Other Scales

Strongest correlations

Interest
Ethics
Growth
Flexibility
Independence
Achievement

Key Area 2. Relatedness

Scale 8. Pressure

High Scorers

Description

Are motivated by having to handle competing priorities, face tight deadlines, and manage setbacks and stress.

Example positive item

Having to make decisions under pressure.

Moderate Scorers

Description

Are motivated to a moderate degree by having to handle competing priorities, face tight deadlines, and manage setbacks and stress.

Or

Are as motivated as the next person by having to handle competing priorities, face tight deadlines, and manage setbacks and stress.

Low Scorers

Description

Are not motivated by having to handle competing priorities, face tight deadlines, and manage setbacks and stress.

Example negative item

Not having to work to tight deadlines.

Relationships with Other Scales

Strongest correlations

Customers
Activity
Management
Competition
Teamwork

Key Area 2. Relatedness

Scale 9. Customers

High Scorers

Description

Are motivated by dealing directly with customers and suppliers, dealing with problems, and handling feedback.

Example positive item

Having to track changes in customers' requirements and expectations.

Moderate Scorers

Description

Are motivated by dealing directly with customers and suppliers, dealing with problems, and handling feedback.

Or

Are motivated by dealing directly with customers and suppliers, dealing with problems, and handling feedback.

Low Scorers

Description

Are not motivated by dealing directly with customers and suppliers, dealing with problems, and handling feedback.

Example negative item

Not having to think about customers.

Relationships with Other Scales

Strongest correlations

Pressure
Activity
Management
Competition
Teamwork

Key Area 2. Relatedness

Scale 10. Activity

High Scorers

Description

Are motivated by having a lot to do, being on the go, and staying busy all the time.

Example positive item

Having a day filled with engagements.

Moderate Scorers

Description

Are motivated to a moderate degree by having a lot to do, being on the go, and staying busy all the time.

Or

Are as motivated as the next person by having a lot to do, being on the go, and staying busy all the time.

Low Scorers

Description

Are not motivated by having a lot to do, being on the go, and staying busy all the time.

Example negative item

A lightly loaded job.

Relationships with Other Scales

Strongest correlations

Pressure
Customers
Management
Competition
Teamwork

Key Area 2. Relatedness

Scale 11. Management

High Scorers

Description

Are motivated by management responsibilities, and having to supervising other people's tasks, performance, and personal development.

Example positive item

Having to coach and mentor people.

Moderate Scorers

Description

Are motivated to some extent by management responsibilities, and having to supervising other people's tasks, performance, and personal development.

Or

Are quite motivated by management responsibilities and having to supervising other people's tasks, performance, and personal development.

Low Scorers

Description

Are not motivated by management responsibilities, and having to supervising other people's tasks, performance, and personal development.

Example negative item

Not being in a leadership position.

Relationships with Other Scales

Strongest correlations

Pressure
Customers
Activity
Competition
Teamwork

Key Area 2. Relatedness

Scale 12. Competition

High Scorers

Description

Are motivated by working in a competitive environment, striving to be the best, wanting to win.

Example positive item

Competing with colleagues for advancement.

Moderate Scorers

Description

Are motivated to some degree by working in a competitive environment, striving to be the best, wanting to win.

Or

Are as motivated as most of their peers by working in a competitive environment, striving to be the best, wanting to win.

Low Scorers

Description

Are motivated by working in a competitive environment, striving to be the best, wanting to win.

Example negative item

Not having to compete with colleagues for status and power.

Relationships with Other Scales

Strongest correlations

Pressure
Customers
Activity
Management
Teamwork

Key Area 2. Relatedness

Scale 13. Teamwork

High Scorers

Description

Are motivated by operating as part of a team rather than as an individual contributor.

Example positive item

Working with other people most of the time.

Moderate Scorers

Description

Are motivated to a fair degree by operating as part of a team rather than as an individual contributor.

Or

Are as motivated as the next person by operating as part of a team rather than as an individual contributor.

Low Scorers

Description

Are not motivated by operating as part of a team rather than as an individual contributor.

Example negative item

Not having to be part of a team.

Relationships with Other Scales

Strongest correlations

Pressure
Customers
Activity
Management
Competition

Key Area 3. Competence

Scale 14. Power

High Scorers

Description

Are motivated by being in charge, exercising control, and having responsibility for people and resources.

Example positive item

Working with other people most of the time.

Moderate Scorers

Description

Are quite motivated by being in charge, exercising control, and having responsibility for people and resources.

Or

Are motivated to some extent by being in charge, exercising control, and having responsibility for people and resources.

Low Scorers

Description

Are not motivated by being in charge, exercising control, and having responsibility for people and resources.

Example negative item

Not having to be part of a team.

Relationships with Other Scales

Strongest correlations

Status
Progression
Recognition
Fear of Failure
Remuneration
Job Security

Key Area 3. Competence

Scale 15. Status

High Scorers

Description

Are motivated by deriving standing and feelings of importance from work and job seniority.

Example positive item

Having status in the company.

Moderate Scorers

Description

Are quite motivated by deriving standing and feelings of importance from work and job seniority.

Or

Are as motivated as the next person by deriving standing and feelings of importance from work and job seniority.

Low Scorers

Description

Are not motivated by deriving standing and feelings of importance from work and job seniority.

Example negative item

Working in a low status job.

Relationships with Other Scales

Strongest correlations

Power
Progression
Recognition
Fear of Failure
Remuneration
Job Security

Key Area 3. Competence

Scale 16. Progression

High Scorers

Description

Are motivated by the opportunity to advance to more senior positions.

Example positive item

Opportunities to get on and advance to more senior positions.

Moderate Scorers

Description

Are motivated to a fair degree by the opportunity to advance to more senior positions.

Or

Are as motivated as most of their peers by the opportunity to advance to more senior positions.

Low Scorers

Description

Are not motivated by the opportunity to advance to more senior positions.

Example negative item

A job without promotion prospects.

Relationships with Other Scales

Strongest correlations

Power
Status
Recognition
Fear of Failure
Remuneration
Job Security

Key Area 3. Competence

Scale 17. Recognition

High Scorers

Description

Are motivated by acknowledgment by bosses and colleagues of efforts, skills, and competencies.

Example positive item

Being recognized for my expertise.

Moderate Scorers

Description

Are quite motivated by acknowledgment by bosses and colleagues of efforts, skills, and competencies.

Or

Are motivated to some degree by acknowledgment by bosses and colleagues of efforts, skills, and competencies.

Low Scorers

Description

Are not motivated by acknowledgment by bosses and colleagues of efforts, skills, and competencies.

Example negative item

Not getting praise and recognition.

Relationships with Other Scales

Strongest correlations

Power
Status
Progression
Fear of Failure
Remuneration
Job Security

Key Area 3. Competence

Scale 18. Fear of Failure

High Scorers

Description

Are motivated by not wanting to let self and others down, and being able to prove others wrong.

Example positive item

The possibility of failing in front of colleagues.

Moderate Scorers

Description

Are motivated by not wanting to let self and others down, and being able to prove others wrong.

Or

Are motivated by not wanting to let self and others down, and being able to prove others wrong.

Low Scorers

Description

Are not motivated by not wanting to let self and others down, and being able to prove others wrong.

Example negative item

Not being exposed to the prospect of failure.

Relationships with Other Scales

Strongest correlations

Power
Status
Progression
Recognition
Remuneration
Job Security

Key Area 3. Competence

Scale 19. Remuneration

High Scorers

Description

Are motivated by the opportunity to boost earnings related to job performance.

Example positive item

Pay linked to performance.

Moderate Scorers

Description

Are quite motivated by the opportunity to boost earnings related to job performance.

Or

Are as motivated as the average person by the opportunity to boost earnings related to job performance.

Low Scorers

Description

Are not motivated by the opportunity to boost earnings related to job performance.

Example negative item

Not seeing a link between effort and pay.

Relationships with Other Scales

Strongest correlations

Power
Status
Progression
Recognition
Fear of Failure
Job Security

Key Area 3. Competence

Scale 20. Job Security

High Scorers

Description

Are motivated by a secure, permanent, and reliable job position.

Example positive item

Secure, permanent and reliable job position.

Moderate Scorers

Description

Are pretty motivated by a secure, permanent, and reliable job position.

Or

Are motivated to some degree by a secure, permanent, and reliable job position.

Low Scorers

Description

Are not motivated by a secure, permanent, and reliable job position.

Example negative item

Not having job security.

Relationships with Other Scales

Strongest correlations

Power
Status
Progression
Recognition
Fear of Failure
Remuneration

4. Reliability and Validity

4.1 Internal Consistency Reliability

Table 2 presents internal consistency estimates based on Cronbach's Coefficient Alpha and raw score SEMs for the standardization group of 2,000 respondents (see Chapter 5 for sample details).

Table 2. MQ Internal Consistency Reliabilities (n = 2,000)

Scale	Alpha	Mean	SD	Raw score SEM	No. Items
AUTONOMY	0.91	120.78	18.62	5.59	42
RELATEDNESS	0.85	83.13	14.43	5.59	36
COMPETENCE	0.89	114.22	17.49	5.80	42
Interest	0.66	18.55	3.61	2.10	6
Ethics	0.67	17.61	3.50	2.01	6
Growth	0.71	18.65	3.64	1.96	6
Flexibility	0.60	16.72	3.29	2.08	6
Independence	0.60	17.58	3.27	2.07	6
Achievement	0.62	17.03	3.43	2.11	6
Business	0.72	14.63	2.86	1.51	6
Pressure	0.64	13.31	3.75	2.25	6
Customers	0.67	13.51	3.44	1.98	6
Activity	0.63	15.52	3.07	1.87	6
Management	0.70	15.36	3.66	2.00	6
Competition	0.64	12.89	3.81	2.29	6
Teamwork	0.66	12.54	2.99	1.74	6
Power	0.66	14.77	3.18	1.85	6
Status	0.64	16.54	3.26	1.96	6
Progression	0.74	18.02	3.72	1.90	6
Recognition	0.68	18.10	3.62	2.05	6
Fear of Failure	0.77	16.18	3.97	1.90	6
Remuneration	0.62	15.25	2.74	1.69	6
Job Security	0.73	14.66	3.33	1.73	6
Median	0.66	15.85	3.44	1.97	

Overall, the MQ has excellent reliability at the factor level, and adequate to good internal consistency reliability at the motivation scale level as defined by the EFPA Review Model reliability assessment criteria.

The reliabilities of the motivation factors range from 0.85 to 0.91. Fourteen motivation facet scales have a reliability in the $0.6 < r < 0.70$ range (adequate in the EFPA Review Model). Six scales have a reliability in the $0.70 < r < 0.80$ range (rated as good in the model).

The MQ primary scale raw score SEMs range from 1.51 to 2.29 with a median SEM of 1.97. This indicates that there is a 68 per cent likelihood that the person's true score on one of the scales will about one Sten either side of the observed score.

4.2 Scale Intercorrelations

Intercorrelations indicate how closely related or independent the MQ scales are. This helps interpretation and throws light on construct validity. Table 3 shows the intercorrelations of the MQ primary scales.

In order to determine how well an assessment instrument differentiates between the different dimensions it is designed to measure, it is necessary to correct the correlations for unreliability. A correlation needs to be divided by the square root of the product of the two variables' reliability to determine what the correlation between the two variables would be if the variables' reliabilities were perfect. If two scales share less than 50% reliable variance, then we can be reasonably certain that they are independent.

Fifty percent of the MQ primary scale pairs share less than 25% common variance and 78% share less than 50% common variance. This indicates that the scales show a reasonable degree of independence.

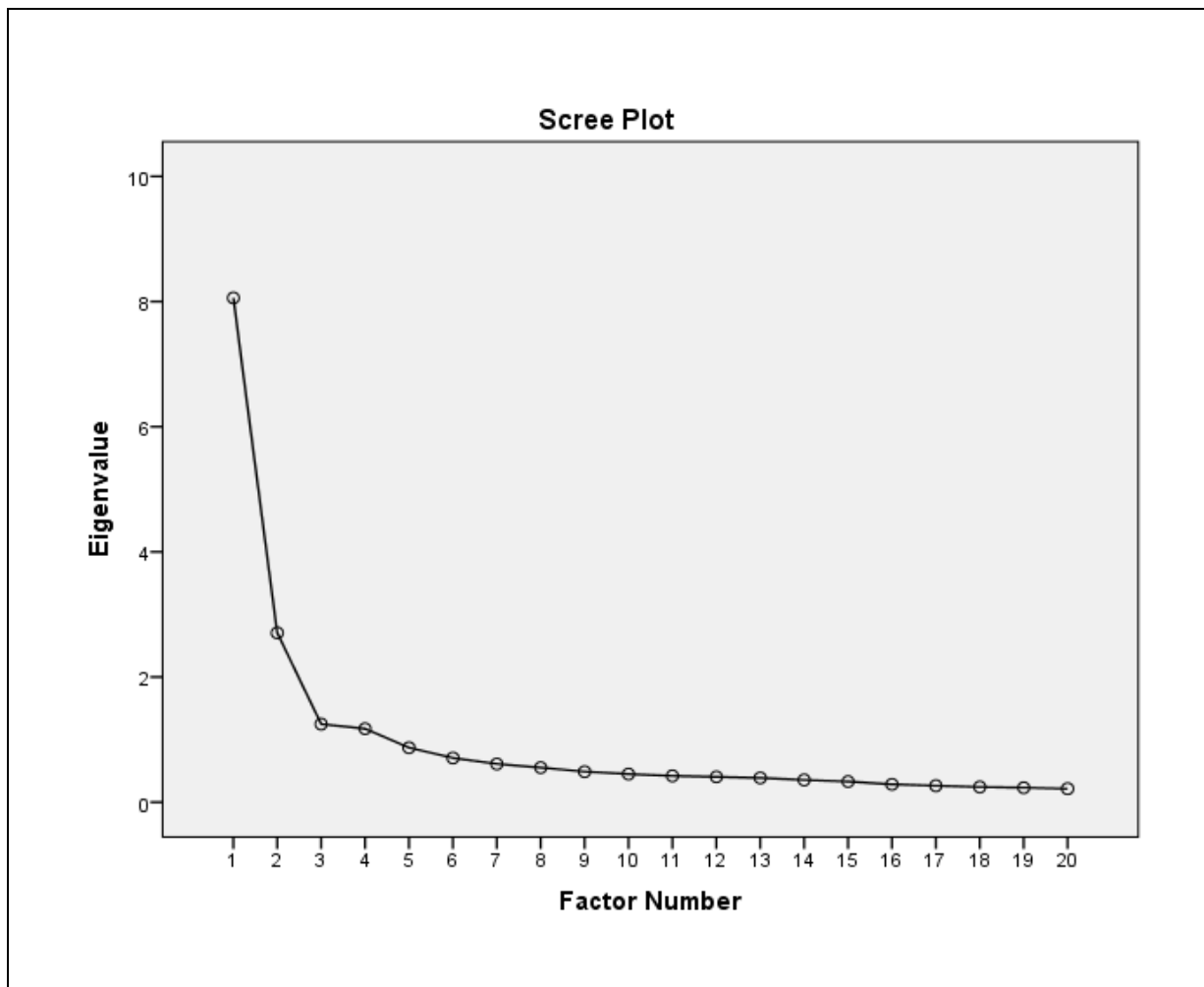
4.3 Standard Error of Difference

The Standard Error of Difference (SEd) helps us determine the size of the gap that you need to see between a person's scores on any two scales before you can conclude that the difference is real. The SEd depends on the reliability of the scales-- the higher the reliability the smaller the SEd is. If there are two full SEds between the scores on two scales, then there is a 95% likelihood that there is a real difference. The median SEd for the MQ primary scales is 1.38 indicating that a difference of about 3 Stens is likely to indicate a real difference between one scale score and another.

4.4 Factor Analysis

Exploratory Factor Analysis (EFA) was carried out following best practice identified by Costello and Osborne (2005). Maximum likelihood extraction with orthogonal and oblique rotations was carried out using SPSS on the MQ scales with 2,000 respondents from the standardization sample. The graph of the eigenvalues (Figure 4) indicates that there are three data points above the break point in the data where the curve flattens out.

Figure 4. Scree Plot for Maximum Likelihood Extraction



A three-factor solution accounting for 53 percent of the variance had the “cleanest” factor structure when evaluated by the strength of item loadings, the number of item cross-loadings, and the number of scales loading on each factor. The Kaiser-Meyer-Olkin measure of sampling adequacy for this solution was 0.93, well above 0.6 required for a sound analysis. Community values ranged from 0.34 to 0.72 with a median value of 0.54. Table 4 shows loadings of the scales on the factors. Scales are ordered and grouped by size to facilitate interpretation. Loadings at 0.45 (20% of variance) and above are in bold, and secondary loadings are in bold italic.

Autonomy. The highest loading scales on this factor are: Interest, Growth, Ethics, Independence, and Flexibility with over 40% overlapping variance. Achievement loads on this factor with just under 40% overlapping variance. This factor provides a broad measure of the subjective experience of doing interesting and ethical work, having flexibility, freedom, and choice; and, having the opportunity to improve one’s skills and develop. This appears to match the importance in SDT on “the subjective experience of psychological freedom and choice during activity engagement.”

Competence. The highest loadings scales on this factor are Status, Power, Progression, and Recognition with over 30% overlapping variance. Fear of Failure (negative loading) and Achievement also load on this factor with over 20% overlapping variance; and, Remuneration loads on this factor with just under 20% overlapping variance. This factor

captures the experience and satisfaction derived from having a position of importance and control over people, and the experience and satisfaction of progressing and advancing, and receiving recognition. This factor measures the need for competence which in SDT is defined as an individuals' inherent desire to feel effective in interacting with the environment. People at work feel effective when they have power and status, when they progress to more senior positions, when they get financial rewards for their performance, and when they get recognition for their achievements from bosses and peers.

Table 4. Factor Loadings for Maximum Likelihood Extraction with Varimax Rotation on MQ Scales (n = 2,000)

Scale	F ₁ Autonomy	F ₂ Competence	F ₃ Relatedness
Interest	0.78	0.31	0.19
Growth	0.74	0.42	0.16
Ethics	0.72	0.11	0.20
Independence	0.69	0.45	0.11
Flexibility	0.69	0.30	-0.13
Achievement	0.61	0.35	0.45
Business	0.32	0.29	0.25
Status	0.39	0.72	0.28
Power	0.12	0.67	0.45
Progression	0.49	0.59	0.25
Recognition	0.51	0.59	0.06
Fear of Failure	-0.32	-0.52	0.21
Remuneration	0.35	0.44	0.13
Job Security	0.29	0.38	-0.32
Pressure	0.16	-0.07	0.73
Management	0.23	0.38	0.63
Activity	0.42	0.09	0.59
Customers	0.12	0.05	0.59
Competition	-0.07	0.19	0.53
Teamwork	0.03	0.01	0.45

Main loadings at 0.45 and above are in **bold**. Secondary loadings are in **bold italic**.

Table 3. MQ Scale Intercorrelations (n = 2,000)

Scale	Interest	Ethics	Growth	Flexibility	Independence	Achievement	Business	Pressure	Customers	Activity	Management	Competition	Teamwork	Power	Status	Progression	Recognition	Fear of Failure	Remuneration	Job Security
Interest	1.00	0.63	0.72	0.62	0.72	0.69	0.42	0.26	0.21	0.47	0.40	0.11	0.09	0.40	0.58	0.61	0.59	-0.38	0.45	0.26
Ethics	0.63	1.00	0.63	0.50	0.59	0.55	0.26	0.24	0.21	0.45	0.38	0.03	0.17	0.26	0.41	0.46	0.43	-0.25	0.29	0.22
Growth	0.72	0.63	1.00	0.61	0.70	0.68	0.37	0.19	0.23	0.44	0.45	0.14	0.13	0.42	0.61	0.70	0.65	-0.44	0.42	0.34
Flexibility	0.62	0.50	0.61	1.00	0.62	0.45	0.31	0.02	0.02	0.21	0.22	-0.13	-0.01	0.23	0.45	0.46	0.53	-0.37	0.40	0.34
Independence	0.72	0.59	0.70	0.62	1.00	0.63	0.40	0.17	0.15	0.39	0.41	0.07	0.00	0.48	0.64	0.60	0.60	-0.41	0.44	0.31
Achievement	0.69	0.55	0.68	0.45	0.63	1.00	0.41	0.42	0.37	0.54	0.53	0.30	0.19	0.52	0.61	0.64	0.56	-0.26	0.45	0.15
Business	0.42	0.26	0.37	0.31	0.40	0.41	1.00	0.23	0.35	0.28	0.26	0.17	0.07	0.33	0.41	0.38	0.35	-0.20	0.45	0.04
Pressure	0.26	0.24	0.19	0.02	0.17	0.42	0.23	1.00	0.44	0.52	0.43	0.39	0.27	0.30	0.25	0.22	0.10	0.16	0.13	-0.26
Customers	0.21	0.21	0.23	0.02	0.15	0.37	0.35	0.44	1.00	0.39	0.45	0.33	0.40	0.28	0.25	0.23	0.13	0.01	0.14	-0.07
Activity	0.47	0.45	0.44	0.21	0.39	0.54	0.28	0.52	0.39	1.00	0.53	0.32	0.29	0.35	0.40	0.42	0.32	-0.11	0.26	-0.02
Management	0.40	0.38	0.45	0.22	0.41	0.53	0.26	0.43	0.45	0.53	1.00	0.32	0.48	0.63	0.53	0.48	0.37	-0.15	0.22	0.03
Competition	0.11	0.03	0.14	-0.13	0.07	0.30	0.17	0.39	0.33	0.32	0.32	1.00	0.15	0.35	0.22	0.27	0.13	0.03	0.23	-0.17
Teamwork	0.09	0.17	0.13	-0.01	0.00	0.19	0.07	0.27	0.40	0.29	0.48	0.15	1.00	0.19	0.13	0.12	0.07	0.00	-0.02	-0.04
Power	0.40	0.26	0.42	0.23	0.48	0.52	0.33	0.30	0.28	0.35	0.63	0.35	0.19	1.00	0.67	0.54	0.46	-0.26	0.39	0.14
Status	0.58	0.41	0.61	0.45	0.64	0.61	0.41	0.25	0.25	0.40	0.53	0.22	0.13	0.67	1.00	0.68	0.65	-0.45	0.48	0.29
Progression	0.61	0.46	0.70	0.46	0.60	0.64	0.38	0.22	0.23	0.42	0.48	0.27	0.12	0.54	0.68	1.00	0.62	-0.41	0.55	0.31
Recognition	0.59	0.43	0.65	0.53	0.60	0.56	0.35	0.10	0.13	0.32	0.37	0.13	0.07	0.46	0.65	0.62	1.00	-0.51	0.45	0.35
Fear of Failure	-0.38	-0.25	-0.44	-0.37	-0.41	-0.26	-0.20	0.16	0.01	-0.11	-0.15	0.03	0.00	-0.26	-0.45	-0.41	-0.51	1.00	-0.28	-0.45
Remuneration	0.45	0.29	0.42	0.40	0.44	0.45	0.45	0.13	0.14	0.26	0.22	0.23	-0.02	0.39	0.48	0.55	0.45	-0.28	1.00	0.12
Job Security	0.26	0.22	0.34	0.34	0.31	0.15	0.04	-0.26	-0.07	-0.02	0.03	-0.17	-0.04	0.14	0.29	0.31	0.35	-0.45	0.12	1.00

Relatedness. The highest loading scales on this factor are Pressure, Management, Activity, and Customers with over 30% overlapping variance. Competition and Teamwork load on this factor with over 20% overlapping variance. This factor captures the experience, satisfaction, and pressure which come from the social aspects of work—interacting with customers, managing people, being part of a team, and competing with others. In SDT, the need for relatedness is defined as individuals' inherent propensity to feel connected to others and to be a member of a group.

4.5 Criterion Validity

Do people's motivational preferences lead them to seek and find particular types of work, and are their needs and preferences linked to how well they perform? In order to throw light on these issues, we analyzed the correlations between MQ scales and a) respondents' ratings of how far their current work met their needs, and b) respondent's job appraisal ratings.

Job demands. Table 5 shows the correlations between the MQ motivation scales and respondent's ratings of their current work. For the motivation dimensions, these are the correlations between the motivation scale raw scores and the twenty single item job evaluation/satisfaction criteria. The factor correlations are correlations between SPSS factor scores and job evaluation scale scores based on the relevant job evaluation items.

At the factor level, there are statistically significant correlations in the range of 0.28 to 0.4. At the motivation dimension level, the correlations range from -0.01 to 0.39 with a median correlation of 0.27. All but one of the correlations are statistically significant. These findings show that respondents were in employment which met their motivation needs to a modest extent. They also provide some evidence for the simple proposition that people look for and find work that matches their motivation needs and preferences.

Performance. Table 6 shows the correlations between the MQ scores and job appraisal ratings. This is based on data collected in a personal details form at the end of the questionnaire where respondents were asked to report how they and their manager assessed their performance at their last performance appraisal using a 4-point scale (excellent, good, satisfactory, poor).

Table 6 shows that there are statistically significant correlations between motivation scores and job appraisal ratings. The size of the correlations shows that the relationship is weak which is not surprising given the number of factors other than motivation preferences that influence job performance. At the factor level, the highest correlation is with the Relatedness factor. At the facet level, the majority of the correlations are statistically significant but the strength of the correlations is low with median correlations ranging from 0.06 to 0.08.

Table 5. Correlations between MQ scales and Job Demands (n=2,000)

Scale	Job Demands
AUTONOMY	0.34**
RELATEDNESS	0.40**
COMPETENCE	0.28**
Interest	0.25**
Ethics	0.39**
Growth	0.22**
Flexibility	0.19**
Independence	0.30**
Achievement	0.31**
Business	0.30**
Pressure	0.29**
Customers	0.34**
Activity	0.34**
Management	0.29**
Competition	0.34**
Teamwork	0.22**
Power	0.32**
Status	0.23**
Progression	0.19**
Recognition	0.21**
Fear of Failure	-0.01
Remuneration	0.23**
Job Security	0.19**
Median	0.27**

* Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).

Table 6. Correlations between MQ Scales and Performance (n=1,756)

Scale	Self	Boss	Combined
AUTONOMY	0.06**	0.09**	0.09**
RELATEDNESS	0.12**	0.16**	0.15**
COMPETENCE	0.07**	0.07**	0.08**
Interest	0.03	0.06**	0.05*
Ethics	0.07**	0.11**	0.10**
Growth	0.05*	0.06**	0.06*
Flexibility	0.04	0.01	0.03
Independence	0.06*	0.08**	0.08**
Achievement	0.10**	0.13**	0.13**
Business	0.05*	0.03	0.05*
Pressure	0.10**	0.13**	0.12**
Customers	0.07**	0.08**	0.08**
Activity	0.10**	0.16**	0.14**
Management	0.10**	0.12**	0.12**
Competition	0.06*	0.10**	0.09**
Teamwork	0.03	0.03	0.03
Power	0.06*	0.07**	0.07**
Status	0.08**	0.09**	0.10**
Progression	0.06*	0.06**	0.07**
Recognition	0.05*	0.07**	0.07**
Fear of Failure	0.03	0.03	0.03
Remuneration	0.07**	0.06**	0.07**
Job Security	-0.01	-0.02	-0.01
Median	0.06*	0.07**	0.08**

* Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).

4.6 Demographics

Table 7 shows the correlations between the MQ scales and gender and age. There are some statistically significant correlations related to gender and age with age playing a stronger part in people's motivation needs and preferences. Looking at gender at the factor level, there are statistically significant differences in the Autonomy and Relatedness factors which indicate that women's needs for autonomy are greater than men's, and men's needs for Relatedness are greater than women's. The correlations between the SDT factors and age indicate that older workers have a greater preference for Autonomy and Relatedness than younger workers.

Table 7. Correlations between MQ Scales and Gender and Age (n=2,000)

Scale	Gender	Age
AUTONOMY	0.10**	0.24**
RELATEDNESS	-0.07**	0.11**
COMPETENCE	0.03	0.04
Interest	0.03	0.20**
Ethics	0.08**	0.29**
Growth	0.13**	0.14**
Flexibility	0.14**	0.17**
Independence	0.03	0.25**
Achievement	0.04	0.13**
Business	-0.13**	0.17**
Pressure	-0.06**	0.11**
Customers	-0.01	0.12**
Activity	0.07**	0.18**
Management	-0.01	0.09**
Competition	-0.06**	-0.13**
Teamwork	0.00	0.04
Power	-0.06**	-0.01
Status	0.00	0.10**
Progression	0.05*	0.01
Recognition	0.09**	0.05*
Fear of Failure	-0.11**	0.02
Remuneration	-0.06**	0.01
Job Security	0.12**	0.02
Median	0.03	0.11**

** . Correlation is significant at the 0.01 level (2-tailed). * . Correlation is significant at the 0.05 level (2-tailed). Men were coded 1, women coded 2.

The picture at facet level also reveals some modest differences related to gender and age. For example, women value development opportunities (Growth), ethical work (Ethics), flexible working conditions (Flexibility), and secure employment (Job Security) more than

men. Men have a slight preference for working in a commercial environment (Business) and worry more about failing in front of their peers (Fear of Failure) more than women. Older workers are more motivated by many of the work features that the MQ measures with the exception being the competitive element of work.

5. Norms

The initial norms for the MQ were collected on the Internet by offering free assessments. Internet users responding to the free offer completed the questionnaire and a personal details form and received a computer-generated feedback report. Once the MQ was published as a commercial test, we created a larger international comparison group made up of respondents who had taken the free assessment and corporate client candidates.

A sample of 2,000 respondents between the ages of 16 and 65 with equal numbers of men and women was created.

Age. The mean age of respondents was 33.7 with a standard deviation of 10.9. The majority of respondents were between the ages of 21 and 50 with 35.6 percent in the 21-30 age group (Table 8).

Race. Two thirds of respondents described themselves as White, 11% said they were Asian, 6% said they were Black, and 5% of a mixed background (Table 9).

Nationality. Nearly 60% of respondents were from the United States and the United Kingdom with almost equal numbers from each country. The next largest group of people (16%) was from Australia and New Zealand (Table 10).

Table 8. Age and Gender characteristics of MQ norms (n = 2,000)

Gender	up to 20	21-30	31-40	41-50	51-60	over 60	Total
Women	97	361	276	191	65	10	1000
	4.9%	18.1%	13.8%	9.6%	3.3%	0.5%	50.0%
Men	98	350	276	188	79	9	1000
	4.9%	17.5%	13.8%	9.4%	4.0%	0.5%	50.0%
Total	195	711	552	379	144	19	2000
	9.8%	35.6%	27.6%	19.0%	7.2%	1.0%	100.0%

Table 11 shows general population norms for the MQ.

Table 9. Racial Characteristics of MQ Standardization Group (n = 2,000)

Race	Female	Male	Total
White	649	670	1319
	32.5%	33.5%	66.0%
Spanish/Hispanic/Latino	23	18	41
	1.2%	0.9%	2.1%
Mixed	65	43	108
	3.3%	2.2%	5.4%
Chinese	20	9	29
	1.0%	0.5%	1.5%
Black	64	61	125
	3.2%	3.1%	6.3%
Asian	89	131	220
	4.5%	6.6%	11.0%
Other	90	68	158
	4.5%	3.4%	7.9%
All races	1000	1000	2000
	50.0%	50.0%	100.0%

Table 10. Country Distribution of MQ Standardization Group (n = 2,000)

Country	Female	Male	Total
United States	325	273	598
	16.3%	13.7%	29.9%
United Kingdom	264	272	536
	13.2%	13.6%	26.8%
Trinidad and Tobago	34	34	68
	1.7%	1.7%	3.4%
India	29	53	82
	1.5%	2.7%	4.1%
Canada	58	32	90
	2.9%	1.6%	4.5%
Australia and New Zealand	141	168	309
	7.1%	8.4%	15.5%
Other	149	168	317
	7.5%	8.4%	15.9%
All countries	1000	1000	2000
	50.0%	50.0%	100.0%

Table 11. MQ General Population Norms (n = 2,000)

Scale	Sten										Scale	Mean	SD
	1	2	3	4	5	6	7	8	9	10			
Activity	0-8	9-10	11	12-13	14-15	16	17-18	19	20	21-24	Activity	15.52	3.07
Interest	0-10	11	12-14	15-16	17-18	19-20	21	22	23	24	Interest	18.55	3.61
Ethics	0-10	11	12	13-15	16-17	18-19	20	21-22	23	24	Ethics	17.61	3.5
Growth	0-10	11	12-14	15-17	18	19-20	21	22	23	24	Growth	18.65	3.64
Flexibility	0-9	10-11	12	13-14	15-16	17	18-19	20-21	22	23-24	Flexibility	16.72	3.29
Independence	0-10	11	12-13	14-15	16-17	18	19-20	21	22	23-24	Independence	17.58	3.27
Achievement	0-9	10-11	12	13-15	16-17	18	19	20-21	22	23-24	Achievement	17.03	3.43
Business	0-8	9-10	11	12	13	14-15	16	17-18	19-20	21-24	Business	14.63	2.86
Pressure	0-4	5-6	7-9	10-11	12	13-14	15-16	17-18	19	20-24	Pressure	13.31	3.75
Customers	0-5	6-7	8-10	11	12	13-14	15-16	17-18	19	20-24	Customers	13.51	3.44
Management	0-6	7-9	10-11	12-13	14	15-16	17-18	19-20	21	22-24	Management	15.36	3.66
Competition	0-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-20	21-24	Competition	12.89	3.81
Teamwork	0-5	6-7	8-9	10	11	12-13	14	15-16	17-18	19-24	Teamwork	12.54	2.99
Power	0-7	8-10	11	12	13-14	15	16-17	18-19	20-21	22-24	Power	14.77	3.18
Status	0-9	10-11	12	13-14	15-16	17	18-19	20	21-22	23-24	Status	16.54	3.26
Progression	0-10	11	12-13	14-16	17	18-19	20-21	22	23	24	Progression	18.02	3.72
Recognition	0-10	11	12-13	14-16	17	18-19	20-21	22	23	24	Recognition	18.1	3.62
Fear of Failure	0-6	7-8	9-10	11-12	13-14	15-16	17-18	19-20	21-22	23-24	Fear of Failure	16.18	3.97
Remuneration	0-9	10	11	12-13	14	15-16	17	18	19	20-24	Remuneration	15.25	2.74
Job Security	0-7	8-9	10-11	12	13	14-15	16-17	18-19	20	21-24	Job Security	14.66	3.33

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