# Psychometric properties
# Team Quality Survey

Jan 2022

## BACKGROUND

Team Quality Survey has its roots in a systematic team development work. Since 2009, and in close contact with American psychology professor Dr. Susan A. Wheelan, thousands of surveys with her validated measurement tool GDQ have been the basis for hundreds of team development processes in a long list of private and public businesses, above all else in Sweden.

Over time, these team development processes have been monitored in a consistent development work in order to trace measurable changes, and thus first and foremost looking into which areas and questions that have the greatest effect on team's efficiency, well-being and quality.

Some of this work has also been followed up by external actors, e.g. via academic papers.

Since 2015 experiences and conclusions has been shared with a large number of external and internal team development consultants via the network related to the team development platform Teambook.

*In this work it has been shown that the areas and factors that Team Quality Survey maps, affect teams' abilities to function efficiently.*

Using mapping as a starting point for dialogues about everyday changes has been a success factor for teams' development. In the light of this, the aforementioned experiences and learnings, and with a clear ambition to make sustainable and efficient team development accessible to more people, we have decided to develop Team Quality Survey.

Team Quality Survey has been developed in order to be a *straight-forward* support system for team development. The purpose of the survey is to give teams relevant suggestions to how they can develop their abilities in a simple way.

*Team Quality Survey is based on a practice-oriented model, Team Quality Model. It states that "teams that agree on, and take personal responsibility for*
- *engaging goals*
- *efficient structures*
- *open interplay*
- *continuous development*
- *a high level of engagement*
*work better together. They work more efficiently, feel better and deliver products of a higher quality."*

Team Quality Survey has, as the name suggests, a team-based approach. This means that it is suitable for teams that work towards a common goal or result.

The focus of TQS is to map *causes* rather than effects. For instance, "team conflicts" aren't dealt with in the survey, but factors that could cause conflicts are, like unclear goals.

TQS has been updated, with new norms and limit values in 2022.

# 35 CLAIMS WITHIN FIVE AREAS

In Team Quality Survey each respondent in the team gets to grade 35 different claims about the team. The claims deal with factors that the team can affect, and which affect the team's performance. The grading is done steplessly.

In TQS 1.0 the claims are the following:

## GOALS
• Our team has a clear, joint mission (we know what we are going to accomplish together).
•We have long-term, engaging goals.
•We have engaging sub-targets.
• We follow up our progress.
• We pay attention to success/celebrate when we succeed.
• I take responsibility for the goals of the team (I clarify and contribute).
• My colleagues take responsibility for our goals.

## STRUCTURE
• We have clear areas of responsibility in the team.
• We work in smart (efficient and lean) ways together.
• We have routines that make our job smooth.
• We can make decisions in an efficient way.
• Our team meetings have a forward direction.
• I make sure we work together, using good structural frameworks.
• My colleagues make sure we work together, using good structural frameworks.

## INTERPLAY
• We have an open way of communicating in the team.
• We give each other sufficient feedback.
• We know about each others' strengths and weaknesses.
• We have a positive and encouraging attitude towards each other.
• We have clear-cut frames about how we act with in the team.
• I take responsibility for our mutual co-operation (openness, feedback, encouragement).
• My colleagues make sure we interact well together.
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## DEVELOPMENT
• We constantly develop our deliveries (products or services).
• We constantly develop our ways of working.
• We make sure we have the right competence for our task.
• We let ourselves be inspired by our environment in order to improve.
• We challenge ourselves with new ideas and creative solutions.
• I take responsibility for our joint development.
• My colleagues take responsibility for our joint development.

## ENGAGEMENT
• We feel a great engagement to our joint mission.
• I feel that what we are doing is valuable - to me.
• I feel that what we are doing is valuable - to others.
• We have agreed on what is prioritized right now.
• Everyone in the team takes on responsibility and tasks voluntarily.
• I take responsibility for our engagement.
• My colleagues take responsibility for our engagement.

Together, these claims provide a two-dimensional image of the team's strength and development areas. One part is how high they estimate the five factors within each area which are often a prerequisite for good team work. The other is how the team members feel they take responsibility for these.

# WEIGHTING OF DIFFERENT CLAIMS

Team Quality Survey states that some of these claims have a somewhat greater impact on the team's potential performance than other claims. For instance, it generally affects the team more if it has "a clear, joint mission" than if it "pays attention to success/celebrates when it succeeds".
That is why each claim in TQS has a weighting level, which affects the result by steering the resistance in an exponential function. It means that a higher weighted claim also has a somewhat higher potential to be classified as a development area for the team.

In TQS 2.0 the claims are weighted according to the following:



*Principled outline of the weighting algorithms in TQS. A higher weighting creates a mathematical resistance, which gives the claim a higher development value when showing the results.*

## WEIGHTING LEVEL A
• Our team has a clear, joint mission (we know what we are going to accomplish together).

## WEIGHTING LEVEL B
• We have engaging sub-targets.

## WEIGHTING LEVEL C
• We have long-term, engaging goals.
• We follow up our progress.
• We have clear areas of responsibility in the team.
• We work in smart (efficient and lean) ways together.
• We have clear-cut frames about how we act with in the team.
• We have agreed on what is prioritized right now.

## WEIGHTING LEVEL D
• I take responsibility for the goals of the team (I clarify and contribute).
• My colleagues take responsibility for our goals.
• We have routines that make our job smooth.
• Our team meetings have a forward direction.
• I make sure we work together, using good structural frameworks.
• My colleagues make sure we work together, using good structural frameworks.
• We have an open way of communicating in the team.
• We give each other sufficient feedback.
• We have a positive and encouraging attitude towards each other.
• I take responsibility for our mutual co-operation (openness, feedback, encouragement).
• My colleagues make sure we interact well together.
• I take responsibility for our joint development.
• My colleagues take responsibility for our joint development.
• We feel a great engagement to our joint mission.
• I take responsibility for our engagement.
• My colleagues take responsibility for our engagement.

## WEIGHTING LEVEL E
• We pay attention to success/celebrate when we succeed.
• We can make decisions in an efficient way.
• We know about each others' strengths and weaknesses.
• We constantly develop our deliveries (products or services).
• We constantly develop our ways of working.
• We make sure we have the right competence for our task.
• We let ourselves be inspired by our environment in order to improve.
• We challenge ourselves with new ideas and creative solutions.
• I feel that what we are doing is valuable - to me.
• I feel that what we are doing is valuable - to others.
• Everyone in the team takes on responsibility and tasks voluntarily.
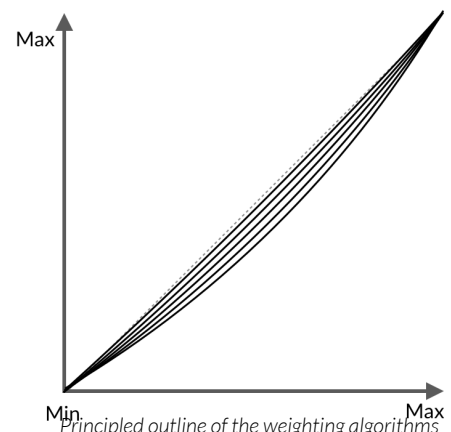
# PRESENTATION OF RESULTS - TQ

The weighting maths is also apparent in the summary of the the team's survey.
The team's total results are shown on a scale from 0 to 100 and with a color code. The higher the value, the higher the number of team respondents.

In TQS 2.0, these are the following
cut-off points:

| TQS values | Code |
|------------|--------|
| 0-60 | Red |
| 60-70 | Yellow |
| 70-80 | Green |
| 80-100 | Gold |
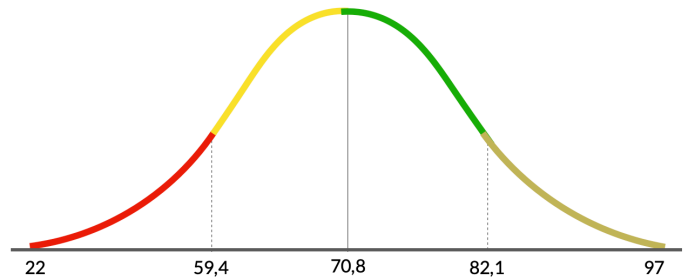


Colour code in a standard distribution curve SE-3A.

22    59,4    70,8    82,1    97

# STANDARDIZATION

A third TQS standardization was carried out in Jan 2022. This included 1999 teams, chiefly Swedish ones. All of these were initial surveys, i.e. the teams hadn't been part of any previous development work.

| Standardisation SE-3A | Jan 2022 |
|---|---|
| Number of groups | 1999 |
| Lowest value | 22 |
| 34 % | 59,4 |
| Median value | 70,8 |
| 34 % | 82,1 |
| Highest value | 97 |
| Standard deviation | 11,4 |
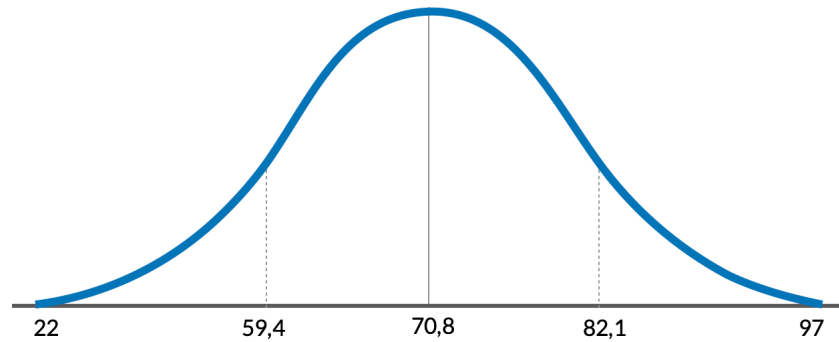


*Standard distribution of total TQ for 641 teams, chiefly Swedish ones.*

An industry standardization of TQS has not yet been carried out.

## FOLLOW-UP STANDARDIZATION

Team Quality Survey has a clear-cut purpose in contributing to the development of teams, by increasing their awareness of strengths and developments areas.
Therefore it will be interesting to also standardize follow-up surveys of teams, so-called B-mappings.
A standardization of TQS' B-mappings has been carried out on 363 Swedish teams, and their third TQS after some sort of development work.
What is noticeable is that the standard distribution curve has moved upwards after the team development input.

| Standardisation SE-3B | Jan 2022 |
|---|---|
| Number of groups | 363 |
| Lowest value | 39 |
| 34 % | 70,4 |
| Median value | 80,5 |
| 34 % | 90,6 |
| Highest value | 99 |
| Standard deviation | 10,1 |
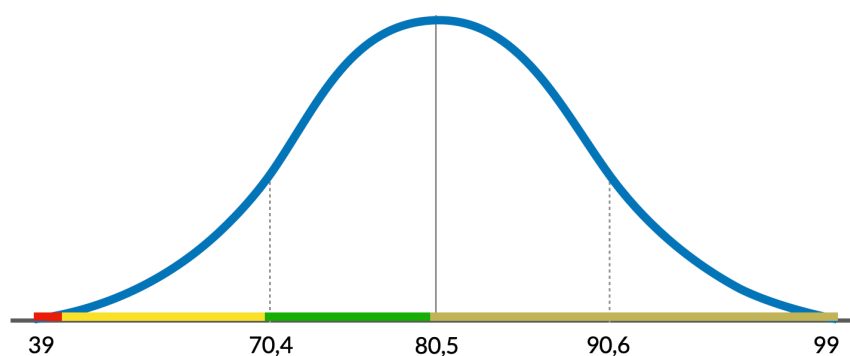


*Standard distribution of total TQ for 363 B-mappings in TQS, chiefly Swedish teams.*

# RELIABILITY

Reliability is a term that is mostly used to describe the *trustworthiness* in a survey like TQS.
A common aspect of reliability is that the result should be the same in several mappings. This can be proved by having the same respondents answering the same questions at several mappings, a so-called *Test - Retest*.
This has been done (see Standardisation), but since TQS was used as a part of team development work where the goal is to improve the performance of the team, i.e. change the result of the mapping, this is not a relevant measure of reliability for TQS.

## CRONBACH´S ALPHA

Another form of reliability is the internal consistency, which is a way of looking at how consistent a mapping or survey is - that there is a correlation between the questions and that they measure the same underlying concept.

Cronbach's alpha ($\alpha$) is a measurement between 0 and 1 of to what extent the questions correlate to each other. For instance, the responses to questions on structure should correlate with [...] to the questions on goals should. A Chronbach alpha larger than 0,8 equals go[...]

Cronbach's alpha for TQS is 0,977, n=3608.

| Cronbach´s alpha | |
|---|---|
| Number of respondents | 3608 |
| CONCEPT | $\alpha$ |
| Entire TQS | **0,977** |
| Area Goals | 0,907 |
| Structure | 0,929 |
| Cooperation | 0,930 |
| Development | 0,936 |
| Engagement | 0,917 |

| Cronbach´s alpha | Assessment |
|---|---|
| $0.9 \leq \alpha$ | Excellent |
| $0.8 \leq \alpha < 0.9$ | Good |
| $0.7 \leq \alpha < 0.8$ | Acceptable |
| $0.6 \leq \alpha < 0.7$ | Questionable |
| $0.5 \leq \alpha < 0.6$ | Poor |
| $\alpha < 0.5$ | Unacceptable |

*https://en.wikipedia.org/wiki/ Cronbach%27s_alpha#cite_note- George,_D._2003-21*

Note. The high value of the TQS could be an indication of redundancy, i.e. some results are so close to each other they could be seen as similar, or iterations.

# VALIDITY

The term validity is used when you want to describe if your mapping shows what it intends to show. Is there a strong correlation between the claims of the TQS and a team's ability to work in a more efficient way, feel better and make a delivery of higher quality?

## CONCURRENT VALIDITY - GDQ CORRELATION

The self-assessment tool Group Development Questionnaire (GDQ; Wheelan & Hochberger, 1996) is a well-known and validated instrument that measures teams' maturity and efficiency.
In order to investigate how well TQS measures teams' effiency, a comparison can be made with GDQ: How well do the responses correspond with each other? If a respondent has a high GDQ level, the TQS level should be high as well, if the effiency of a team measured.
Correlation can be measured in many different ways, and the most common way is to use Pearson's correlation coefficients (p) which shows how well two different parameters correlate with each other.
The correlation coefficiency has a value between 1 and -1, where 0 denotes no correlation, 1 denotes maximum positive correlation and -1 denotes maximum negative correlation.

In a comparison where 58 teams responded to both a GDQ and a TQS, the correlation coefficiency between GDQs and TQS was **0,932**, thus a very high correlation.



*Responses to GDQ and TQS from the same respondents. p = 0,9322. n = 58.*
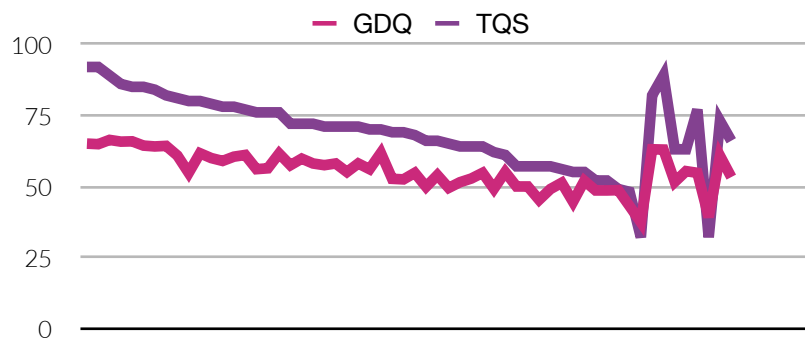
## RELATIONSHIP TO MATURITY PHASE

TQS does not claim it maps the maturity of teams, which, on the other hand, is what GDQ does.
However, it is shown in the comparison ,where 58 teams responded to both GDQ and TQS, that there are certain correlations between the stage description in GDQ and the colour code used in TQS.

| TQS values | GDQ Stage description | | | | |
|---|---|---|---|---|---|
| n=58 | Stage I Depenceny & Inclusion | Just as much Stage I & Stage II | Stage II Counterdependency & Fight | Stage III Trust & structure | Stage IV Productivity |
| 0-60 | 8 % | 45 % | 100 % | | |
| 60-70 | 84 % | 55 % | | 14 % | |
| 70-80 | 8 % | | | 86 % | 6 % |

| TQS values | GDQ Stage description | | | | |
|---|---|---|---|---|---|
| 80-100 | | | | | **94 %** |
| | 100% = 12 | 100%= 11 | 100%= 2 | 100%= 15 | 100%= 18 |

*The colour code in TGQ could be said to hint at the stage the team is at.*

# CONTENT VALIDITY
## - CORRELATION WITH PREVIOUS STUDIES

There are many studies that support the idea that "teams that agree on, and take personal responsibility for
- engaging goals
- efficient structures
- open interplay
- continuous development
- a high level of engagement

work better together. They work more efficiently, feel better and deliver products of a higher quality."

The following is a compilation of some of them:

### STUDIES ABOUT MATURE TEAMS' BETTER RESULTS

**Wheelan S., Furbur Team development, communication and performance, (2006) Facilitating group communication in context: Innovations and applications with natural groups, Vol.2.**
In the year 2000, at a large insurance company in the USA, a team development consisting of six groups was completed, and in a year they developed into "mature" team. A big comparison between their results before and after the development was made:
The average time for a "new customer process", which is from the time of sale to registered customer, went from 34,2 days to 28.0 days. They also made almost 50% more closings. Insurance errands went from 35 to 25 days and the average time for billing, "billing turnaround", went down from 6 days to an average of 2,8 days.

**Wheelan S., Kesselring J. (2005). Link Between Faculty Group Development and Elementary Student Performance Research, July 2005.**
Between 1999 and 2001, faculty groups at 61 elementary schools (about 2300 teachers) in Ohio was measured with GDQ. These measurements were then compared to the results of the national standard tests for fourth graders.
The students who went to schools with high performing faculty groups had a result that was 20-25 percent better in five subjects.
The biggest difference could be seen in the 34 schools which were located in areas known as poor. There, the high performing faculty group's students had more than 50 percent better results than the others.

**Wheelan S., Burchill C., Tilin F. (2003) The link between teamwork and patients' outcomes in intensive care units,**
**The whole article is published in American Journal of Critical Care, November 2003.**
17 different teams in 9 hospitals on the American east coast were compared in a study. All of them worked with intensive care and the comparing measurement was SMR, which is a way of measuring expected mortality amongst the patients.
The six more high performing teams (according to the measurements) had a mortality rate of 0,32 SMR.
The six teams who had the lowest GDQ, had an average mortality rate of 1,10 SMR, which is more than three times higher.
Between the worst group and the best group, the difference was astounding: from 0,13 to 1,4.

**Wheelan S., Murphy D., Tsumura E., Kline S. F. (1998) Small Group Research, Member Perceptions of Internal Group Dynamics and Productivity, 1998.**

In this study, it is shown that the correlation is high between groups with high levels of maturity and short execution time, high levels of customer service and better risk assessment within the finance sector as well as high productivity and high ranking with leaders and hotel employees.

ABOUT TEAM QUALITY AS A POINT OF REFERENCE

During 2013-14, 32 Swedish groups were followed up after having worked with the five factors of Team Quality. For one day, with guidance, they got to define what improvements they wanted to make to their every day to better their Team Quality.
In parallel to this, GDQ measurements were made to decide on the group's maturity and efficiency.
This was made both in connection to them starting to work with their questions and as a follow up measurement after 4-6 months.
23 of these groups were assessed, via self measurement, to have taken responsibility for their development questions.
The follow up measurements showed that 91 percent of these 23 groups heightened their maturity and/or efficiency.
The average increase of maturity was one step, measured in IMGD.
The groups increased their cooperation efficiency, according to GDQ, with an average of 10 percent.

(SWE) Teambuildings effekt på gruppers utveckling: en kvasiexperimentell studie på befintliga arbetsgrupper inom en svensk myndighet (Nissling Skår, 2017).
In a study from 2017, two PhD's at University of Gothenburg followed up a team investment at Livsmedelsverket (Swedish NFA) where Team Quality was used as the foundation model.
The results of a one day TQ-intervention and a six month follow up was that the percentage of measurable high performing teams (phase IV in GDQ) increased by 233 percent; from 15 to 50 percentage of the groups. In the control group the change was 0 percent.
They write:
"Team Quality" has aspects which are comparable with the factors that Klein et al. (2009) found as most effective in teambuilding, as "Team Quality" includes both goal formulation and role clarification.
… communicative behaviours are in line with aspects of "Team Quality", for example benefitting structures, where the value of efficient meeting structures and decision and information routes are emphasised, or high commitment where the group members are encouraged to take personal responsibility to complete and follow up on the goals of the group.

(SWE) "Bättre företagsprestationer genom effektivare grupper" (Lampa, 2017).
In this case study and master essay, Klara Lampa performed classic industrial KPI's between Öresundskraft (Swedish energy company) and five other comparable companies within the same line of business.
This was after Öresundskraft went through an investment in team development based on the Team Quality areas, which went on for several years.
Six out of eight Key Performance Indicators showed a strong long term effect.
Return on total capital - no correlation.
Operating margin - strong positive correlation.
Number of customers - strong linear positive correlation.
Customer satisfaction - strong positive correlation.
Total costs - strong negative correlation.
Costs in relation to revenue - strong negative correlation.
Profitability per employee - strong positive correlation.
Absence because of illness - no correlation (low from the start).
The study is concluded by: "When Öresundkrafts work groups became more efficient, the short term profitability increased, they gained more and satisfied customers, the costs decreased and the employees became more efficient and felt better.
Also, the flexibility and openness for change increased, an aspect that is especially relevant for companies or lines of business that faces changes. The results from this study can be used by companies who want to improve their internal efficiency and increase their results." STUDIER OM MOGNA TEAMS BÄTTRE RESULTAT

ABOUT THE IMPORTANCE OF CLEAR GOALS

**(SWE) Granström K., Jern S., & Stiwne D. (1998). Grupper och gruppforskning. FOG-rapport.**
This report concludes much of the research that's been done regarding clear goals in the group up until 1998. It concludes that common, clear goals are a necessity for groups to work efficiently. Their conclusion taken from research and theories is: "The group should work towards developing clear goals, that can change with the groups development and the changes of the world."

**Kleingeld A., can Mierlo H., & Arends, L. (2011). The effect of goal setting on group performance: A meta-analysis. Journal of Applied Psychology, 96(6), 1289-1304.**
This relatively new meta-analysis (2011) shows that specific goals leads to higher group results compared to non-specific goals. The clearest difference can be seen when the goals are difficult/challenging, but specific goals are also better than non specific when it comes to simpler tasks. Group-centric goals, which are common result goals, leads to better results in the group than ego-centric goals, individual result goals. So you can say that common group goals increase the result in the group compared to if every person sets their own individual goals.
This meta-analysis also shows that Goal setting theory is valid for groups. This is a theory that has previously mostly been studied for individuals, but it is now shown to be true even for groups. Goal setting theory shows that specific, difficult goals leads to better results than a) non specific goals and b) specific, simple goals. Specific challenging goals lead to increased motivation in the group, amongst other things planning, cooperation and efficiency seems to improve.

**Weldon E., Jehn K. A., & Pradhan P. (1991) Processes that mediate the relationship between a group goal and improved group performance. Journal of Personality and Social Psychology, 61. 555-569.**
Suggests that clear goals can stimulate several performance-oriented processes such as:
increased effort
better planning
more correct follow ups of the quality of the groups work as well as increased commitment in the group.

**Weldon E., & Yun S. (2000). The effects of proximal and distal goals on goal level, strategy development, and group performance. Journal of Applied Behavioural Science, 36(3), 336-344.**
This study shows that by setting both short term and long term goals, the groups performance improves. This is explored in this study amongst groups of nurses. By setting both short term and long term goals, the long term goals that are set tend to be more challenging and this leads to better performances.
The study references the famous social psychology researcher Alberta Bandura. Bandura describes in the book Self-efficiency: The exercise of control benefits with short term goals. To, beyond having long term goals, also have short term goals lead to decreased procrastination as well as an increased feeling of having achieved something which increases motivation. Short term goals also sets up for follow up whether the work towards the long term goals are on the right path.

**Kozlowski S. J., & Ilgen D. R. (2006). Enhancing the Effectiveness of Work Groups and Teams. Psychological Science in the Public Interest, 7(3), 77-124.**
The compilation of studies regarding cohesion in teams. The cohesion increases when the teams requirements to work together increases (dependency is needed) and when more coordination is needed regarding spreading of information and effort.
This shows that groups would benefit from sometimes working close together during intense periods, but mostly when the task allows or needs this.

**Forsyth D. R. (2009) Group dynamics. (5. ed.) Belmont, Calif.: Wadsworth.**
In this basic book of group psychology, it is briefly concluded why clear goals are important in groups. Groups that set clear, challenging goals perform better than groups with unclear of forgotten goals.
This is referenced in two studies:

Latham and Baldes (1975() found in a study of truck drivers that their efficiency when it came to loading their truck increased from 64% to 94% by only clarifying the common goal to "load 100% of what was possible during a day". Harkins and Szymanski (1989) found that groups who worked with generating new ideas became much more efficient when they were agreed on how they would evaluate the quality of the work.

**(SWE) Olofsson R. (2010). Beteendeanalys i organisationer: handbok i OBM. (1. utg) Stocholm: Natur & Kultur.**
Within Organisational Behaviour Management (OBM) we talk about the importance of goals, but use the term results instead. OBM is built on learning psychological theories and finds and how these can be applied in organisations. To communicate a desired goal in organisations and groups, which means to describe more exactly what should be achieved creates meaning and motivation for the work.
To clarify the result or goal makes it easier to perform measurements for how the work is going, so to see if the work that is being done leads us to where we want to be.
Some goals can be very long term and it can become challenging to see how or if what's going on in the every day work has any impact on the long term goal. Then it can be a good idea to set up short term goals to make the group see that their going in the right direction so the performance doesn't suffer.

**(SWE) Bolman L. G., & Deal T. E. (2012) Nya perspektiv på organisation och ledarskap. (4., utvidgade och uppdaterade uppl.) Lund: Studentlitteratur.**
According to an organisational, symbolical perspective, symbolism contribute to efficiency in organisations because it gives the employees a meaning with the job. One type of symbolism is ceremonies which can mean to celebrate the triumphs of the company.

**(SWE) Kaufmann G., & Kaufmann A. (2005). Psykologi i organisation och ledning. (2., rev. uppl.) Lund: Studentlitteratur.**
To amplify means to give good consequences to behaviours you want to continue within the organisation or group. To achieve the set goals is one of the things that should be amplified. To stop and celebrate an achieved goal is one way to strengthen the co-workers work, to get them to keep working towards achieving the goals.


ABOUT THE IMPORTANCE OF BENEFITTING STRUCTURES

**Schalk R., & Roe R. E. (2007). Towards a Dynamic Model of the Psychological Contract. Journal for the Theory of Social Behaviour, 37(2), 167-182.**
In this article, they write about how a common agreement between the individual and the organisation regarding roles, expectations and structures creates a safety and predictability. A psychological contract like this creates a bigger commitment from the co-worker in relation to the organisation and the group. By making such expectation and structures explicit, the co-workers knows what behaviours are expected of the and what reply they can get from those behaviours. By clarifying what and how we work in the group and organisation, we increase the efficiency and well being of the co-worker and the organisation.

**Forsyth D. R. (2009). Group Dynamics . (5. ed.) Belmont, Calif.: Wadsworth.**
In Forsyth's basic book of group psychology, it is described that meetings with clear frames, which can for example be about keeping to pre-decided times and a pre-prepared agenda where everyone knows what is expected of them, ease the work process. It can lead to both more efficient decisions and a higher satisfaction in the group.
The organisation can decrease the stress for the individual, and by doing so create a higher wellbeing, by structuring the work even more byt for example having the boss clarifying what expectations exist for the co-worker and their role at work.

**Mudrack P. E. & Farell G. M. (1995). An examination of functional role behaviour and its consequences for individuals in group settings. Small Group Research, 26 (4), 542-571.**
Roles can be described as a set of behaviours expected from people in different posts within a group or social environment. There are relationship or task oriented roles. Relationship oriented roles are those who give emotional support and uphold a harmony in the group, whilst task oriented roles are those who push the work forward and push the group members to work with the task. Groups that have both types of roles have better cooperation and wellbeing.

**Gilboa D., Shirom A., Fried Y., & Cooper C. (2008). A meta-analysis of work demand stressors and job preference: Examining main and moderating effects. Personnel Psychology, 61, 221-271.**

Gilboa showed that in groups that don't have defined roles, where there is an uncertainty amongst group roles and group conflicts lead to decreased wellbeing, worse performance and a larger tendency to quit within the organisation. Instead, if the areas of responsibility, which is closely connected to roles, are clarified the group and organisation can perform at a high level and have a good cooperation.

**(SWE) Granström K., Jern S., Näslund J., & Stiwne D. (1998). Grupper och gruppforskning. FOG Samlingsvolym 1.**

Efficient routes of information and communication structures within organisations can be important to allow quick spread of information to a large number of affected employees.

It's important within information structures that the same information reaches everyone affected. It's good if the communication passes through as few people as possible to reach everyone, this to make the spread of information more efficient.

This report is rooted in, amongst other things, Susan Wheelan's recommendations regarding communication. They come to this conclusion regarding information structures:

A. The group should early on consciously choose and form a communication structure that is adapted according to the demands of the task.

B. Most newly formed groups benefit from starting with a centralised communication structure in this work.

C. The group should use centralised communication with simpler types of problems or when quick growth of leadership or organisational development is desired.

D. The group should, in the long term, work toward a de-centralised structure, because this gives higher motivation, better cooperation and higher efficiency in complex tasks.

ABOUT THE IMPORTANCE OF OPEN COOPERATION

**Wheelan S. A. (2005). Group processes: a developmental perspective. (2nd. ed.) Boston: Allyn and Bacon.**

An organised system is needed to achieve one's goals, and to follow this, a shared perception of what this system looks like is needed. To know what a group is working towards and how this should be done, it takes clear communication where verbal sharing of perceptions, values and attitudes are given. To have an open, communicative climate facilitates a common route to the goal and this climate is established early on in a group's development to later be hard to change.

When it comes to complex tasks, a de-centralised communication will give the best results. This means that everyone can openly discuss problems and with that, the problem becomes a task for the group to solve. This generates more solutions, which often leads to better results.

**Wisdom T. N. & Goldstone R. L. (2011). Innovation, imitation, and problem solving in a networked group. Nonlinear Dynamics, Psychology, And Life Sciences, 15(2), 229-252.**

In this article, participants got to solve complex tasks and during this time, they got access to tasks regarding how others tried to solve the same task. It was observed that participants took inspiration from others attempts and often it was modified and the "new" solution was tried. Because others then saw the modified solution, they could make a small change and try to make the solution even better. The authors of this article implies that this form of non-ownership and gradual development tendency of the solution gives the whole grop an increase ability to problem solve. You can interpret the results as saying that openness between members and a de-centralised responsibility for complex tasks gives better results. This is in line with Wheelans (2005) conclusion that de-centralised groups perform better.

**Snadowsky A. (1974). Member satisfaction in stable communication networks. Sociometry, 37(1), 38-53.**

In this article it is found that members like being in groups that are de-centralised, which means groups with open communication between all members. There are two parts of good communication: efficiency and to like being in the group.

**Behhfar K. J., Peterson R. S., Mannix E. A., & Trochim W. K. (2008). The critical role of conflict resolution in teams: A close look at the links between conflict type, conflict management strategies, and team outcomes. Journal of Applies Psychology, 93(1), 170-188. doi: 10.1037/0021-9010.93.1.170**

In this article, cluster analytics are being made of 57 different groups based on the variables results and comfort. This creates four clusters: 1. Good results and good comfort. 2 Bad results and good comfort. 3. Good results and bad comfort. 4. Bad result and bad comfort.

What was common between the groups in cluster 1 was that they, from the beginning, discussed how they would manage the work and how they would handle conflicts, they were working proactively. When it came to decision making and conflict management they tried to handle this via discussion and listening to everyones opinions, so that when solutions or decisions where made, the whole group were in on it. This doesn't mean that everyone got their way, but the group members came to their decision or compromise together. The other cluster groups failed to either work proactively or to listen to everyone opinions or both. To conclude, clear communication is needed in a group to reach their goals and this should be happening from the start, when the group is made. If communication is de-centralised, i.e. everyone gets their say, everyones opinion is valid and everyone has a responsibility, it leads to better results and better cooperation in the group. If we let everyone have their say and listen to everyone, the group will simply perform and feel better.


ABOUT THE IMPORTANCE OF POSITIVE DEVELOPMENT CULTURE

**Schilpzand M. C., Herold D. M., & Shalley C. E. (2011). Members' openness to experience and teams' creative performance. Small Group Research, 42(1), 55-76.**
In this article, the members openness for new impressions have been measured, what we usually call curiosity. It was observed that curiosity is in correlation with creativity in groups. What was also found was that it's a good thing is the level of curiosity amongst the members in a group varies, i. e. if there was a mix of very curious and not so curious people in the group. The authors mean that this can be because certain members search for new impressions and others are more focused on the task and together these two lead to a creativity.

**Sawyer J. E., Houlette M. A., & Yeagley E. L. (2006). Decision performance and diversity structure: Comparing faultlines in convergent, crosscut, and racially homogeneous groups. Organisational Behaviour and Human Decision Process, 99(1), 1-15.**
This article supports the fact that differences in groups is a good thing to enhance their creativity and counteract the group ending up stuck in a rut. The results show that in groups where members look physically different it is assumed that there are also differences in opinions. If the members instead look alike, it is assumed that the other members share ones' own opinions. In groups where members don't assume that others share their opinions, members are more curios and open for new solutions compared to groups who assume everyone has the same opinions. Openness in groups showed to lead to better decision processes and also better results on the tasks performed

**Baker A., Perreault D., Reid A., & Blanchard C. M. (2013). Feedback and Organisations: Feedback is Good, Feedback-Friendly Culture is Better. Canadian Psychology, 54(4), 260-268.**
The article argues for feedback being a good tool for an organisation to better itself and stay on a high level when it's achieved.
As suggested by the name, the article thinks that the best isn't good individual feedback, but rather that the organisation creates a feedback-friendly culture. The article presents a definition of culture from an organisational perspective and three "elements" the authors deem important to build the feedback-friendly culture. The three elements are to encourage continuous learning, foster a trustworthy climate and a transition from traditional feedback systems to continuous dialogue.

**Guerra-López I., & Hutchinson A. (2013). Measurable and Continuous Performance Improvement: The Development of a Performance Measurement, Management and Improvement System. Performance improvement quarterly, 26(2), 159-173.**
According to the article it is very common that improvement programmes that aim to create continuous improvements fail and the article tries to explain why this happens and what could be done to prevent this. The article means that the research field regarding continuous improvement programmes is weak. But something the article thinks the research argues strongly for is that improvement programmes demands very meticulous and regular measurements of the results that the programmes create. Feedback is seen as a very important resource. The article also presents its own model for improvement work.


ABOUT THE IMPORTANCE OF HIGH COMMITMENT

Ferreira P., & Oliveira E. (2014). "Does corporate social responsibility impact on employee engagement?", Journal of Workplace Learning, Vol. 26 Iss: 3/4, pp.232-247.
In this article, the researches bring up earlier research discoveries regarding the more organisations encourage and spend time on common social responsibility in work groups, the more committed the employees get. With common social responsibility, they mean to create a positive social, including climate. When employees feel commitment to their tasks, they become more likely to work harder (take on responsibilities, push tasks and focus on the task). With committed employees, absence because of illness is less likely. Research also shows that committed employees generate a higher level of satisfaction with customers. Employees tend to feel more committed in organisations that have a culture to care for their customers and employees.

Halbesleben J. B. (2010). A meta-analysis of work engagement: Relations with burnout, demands, resources, and consequences. In A. B. Bakker, A. B. Bakker (Eds.), Work engagement: A handbook of essential theory and research (pp. 102-117). New York, NY, US: Psychology Press.
In this meta-analysis of the current research of commitment, the researchers found a strong positive link between resources and commitment. Resources means social support, autonomy, feedback, positive organisational culture and self-efficiency. Commitment was showed to correlate to positive work results and tendencies to higher commitment to the specific task. To conclude, research has shown the commitment in the work is important for employees performances and wellbeing.

Chugthai A., & Buckley F. (2011). "Work engagement: antecedents, the mediating role of learning goal orientation and job performance", Career Development International, Vol. 16 Iss: 7, PP.684-705.
The results in this study shows that goal orientation in an organisation mediates effect for the work commitment of work performance and innovative work behaviours. Individuals with strong goal orientation tend to work after inner motivation. Individuals who are curios and have a will to learn tend to set challenging goals and commit more to the task. The results in the article also shows that trust for the groups' leader is an important factor for work commitment. The article shines a light on the fact that earlier research has shown that positive resources, feedback and social support, as well as personal touches, self efficiency and optimism impact motivation and work commitment.

(SWE) Nilsson O., Wallo A., Rönnqvist D., & Davidsson D. (2011). Human Resource Development: att utveckla medarbetare och organisationer. (1st. ed.) Lund: Studentlitteratur.
To reach high quality in a work group, the authors implies that advantages like good educational opportunities, supportive organisational culture, encouraging bosses and experienced action space isn't enough. Learning can not be done without an individuals motivation and commitment. The work culture can work both as an obstacle and an opportunity to create lust to learn and develop in an individual.

(SWE) Bolman L. G., & Deal T. E. (2012). Nya perspektiv på organisation och ledarskap. (4., utvidgade och uppdaterade uppl.) Lund: Studentlitteratur.
When individuals find a purpose in their work, they increase their motivation amongst the the employees, which benefits the organisation. It's important to strengthen the bonds between individual and organisation by for example, good personnel handling and to allow the employees the freedom to make decisions. The employees need to fill their work life with meaning and work enriching tasks.

Anitha J., (2014). "Determinants of employee engagement and their impact on employee performance", International Journal of Productivity and Performance management, Vol. 63 Iss 3 pp. 308-323 http://dx.doi.org/10.1108/IJPPM-01-2013-0008
The conclusion of this article was that work environment and good relationships between employees are important factors in relation to the employees commitment. To reach wellbeing in a group, the work culture needs to be perceived as safe and should encourage meaningful work tasks. It's important to have a good team climate, collective pride, commitment, communication, ethical approach and context amongst colleagues to build efficient, high performing team!

Compilation of references:
Lina Södergren and Linnea Trosell, Psykologisation.