FINCODA Innovation Barometer

The 'How to' Guide
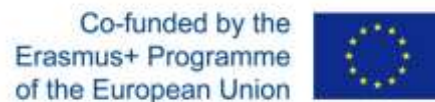
Introduction

This guide has been designed to provide an understanding of the FINCODA Innovation Barometer including its origins, purpose and modes of use within both business and academic institutions. This guide has been produced by the founders and creators of FINCODA to share the benefits of using the barometer and how to use it for the best outcomes.

The FINCODA Innovation Barometer is an output of the European Union funded FINCODA Knowledge Alliance project. The aim of this project was to create a framework for innovation competence development and assessment, and was delivered through University and Business collaboration across five European countries. To find out more about the FINCODA partners, see page 2.

What is covered in this guide?

1. What is FINCODA?

1.1 About the FINCODA project

The FINCODA project was born out of a recognition of how important innovation is to both the business and academic worlds. It is a critical component for success in many modern-day organisations. Without it, there can be a drought of creativity, an absence of new ideas, and a failure to see how 'good' can be turned into 'great'. Without innovation, an organisation's growth can be severely stunted. Similarly, without a focus on innovation at academic institutions, graduates can leave without a valuable skill crucial to their success in the workplace. These graduates are the future of the professions and our future leaders - their capacity to innovate is vital. In order to increase levels of innovation competence, we need a valid and reliable way of measuring an individual's capacity to innovate. From this need, the FINCODA project was born.

At the core of the project is the development of the FINCODA Innovation Barometer (FIB). This is a psychometric tool that measures individuals' capacity for innovation. It breaks innovation into 5 core areas and assesses the individual's capacity in each of these areas separately. The research underpinning this tool has been conducted by the FINCODA partners who bring together both the academic and industry innovation expertise from across Europe. Read more about our partners here.

The FIB has undergone extensive statistical analysis in order to ensure its validity in accurately measuring innovation competence across both student and professional groups. Results of the statistical analysis can be found in Section 3 of this guide.

1.2 The FINCODA Model of Innovation

The FINCODA Model of Innovation has been created and validated through analysis conducted by the FINCODA partners. This model is not based on statistical data, but rather on the systematic review of the literature analysed by partners from both academia and business, specialists in innovation and employers of innovators, who identified a set of core competences or dimensions that comprise innovation competence. The five competences are:

Creativity

The ability to think beyond tradition to generate or adapt meaningful alternatives (regardless of their possible practicality or future added value)

Critical thinking

The ability to deconstruct and analyse ideas (to evaluate advantages and disadvantages, foresee how events will develop and estimate risk)

Initiative

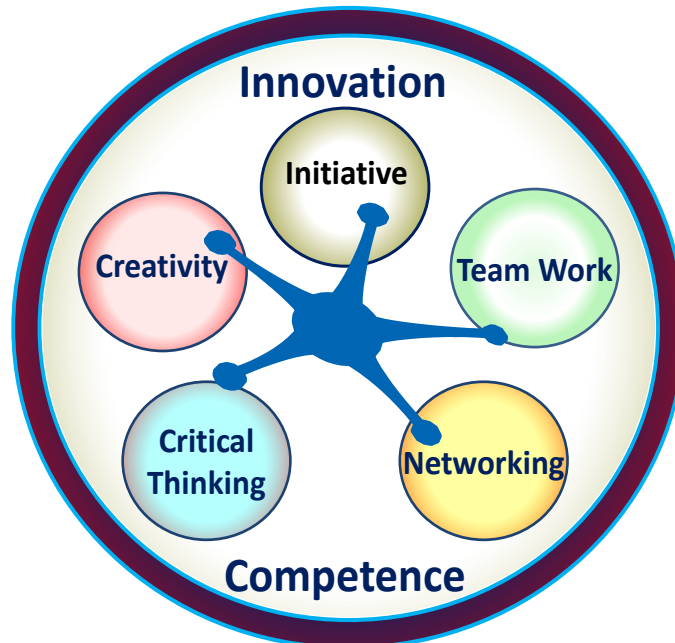The ability to make decisions or carry out actions to operationalise ideas, as well as mobilise and manage those who have to implement the ideas

Teamwork

The ability to work efficiently with others in a group

Networking

The ability to involve internal / external stakeholders

© FINCODA UPV-SEE-CSP team (2017). *Innovation Competence Model*

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2. Using the FINCODA Innovation Barometer

2.1 About the Barometer

The FIB is an online questionnaire that asks an individual to rate the extent to which they agree with a series of statements about innovation. This questionnaire is completed through the FINCODA online survey system. The questionnaire can be completed by an individual through self-selection for their own development, or by invitation from their employer or academic institution. In both cases, the individual's responses to these questionnaire statements are compared to a norm group[1] and are presented in a report that summarises the individual's results in each of the five areas: Creativity, Critical Thinking, Initiative, Teamwork and Networking.

If the FIB is completed by more than 8 individuals within a team, organisation or academic institution, then individual's results can also be compared to the aggregated group or organisation norm. This allows an employer or academic institution to understand individual's innovation competence in each of the five areas, as compared to the average within that group.

[1] A set of aggregated responses from a representative group of students and professionals, against which an individual's responses are compared. Comparison to a norm group allows an individual to see how far they deviate from the 'norm'.

2.2 How can FINCODA be used by companies?

Case Study 1

An SME employing 100 people wants to ensure that their workforce continues to be innovative and that they are maximizing the opportunities available to them. They are considering implementing a development programme for employees, however they would first like to understand the current level of innovative ability within the organisation.

The organisation invites all employees to complete the online FIB and the administrator (internal to the company) creates a group that allows aggregated data to be reviewed. This data highlights which of the five innovation dimensions the group excelled in, and which have room for development. This information forms the basis of a learning needs analysis for the 100 employees and a professional development programme is designed to target improvement in the areas (dimensions) that the group score lower.

Each employee also receives a personalised development report (downloaded from the FINCODA survey system after completion) that would summarise their scores on each dimension and suggest developmental 'tips' on how to improve their skill or ability for each.

Case Study 2

The People Director of International FMCG organisation are expanding their capabilities and diversifying into new product lines. They have 250 product developers and technical specialists worldwide and would like to identify a small group to work on a product development project to create two to three new products over the next six months.

The organisation invites their 250 product developers and technical specialists to complete the online FIB and reviews the group's aggregated scores. The FIB results show that the group have above average competence on the creativity and critical thinking dimensions but that they lack in competence on the interpersonal dimensions of teamwork and networking. When deciding on the employees who should make up the product development project group, this is taken into consideration. In order to ensure a diverse group of innovators, with competence across all five areas, the project lead seeks out individuals who score higher on the initiative, teamworking and networking dimensions.

The organisation recognised that without a range of innovation competence, the project team could have been a group of idea 'generators' and may have lacked the initiative and interpersonal skill to bring their ideas to fruition. The FIB allowed them to select a team of individuals who collectively had a diverse range of innovation competence, therefore increasing the likelihood of success in the new product development project.

2.2 How can FINCODA be used by academic institutions?

Case Study 1

A lecturer at a university of applied sciences wants to develop and assess students' innovation competences during their 'Design and Development' course. On this course, the students work in teams with real-life problem-based assignments, and their task is to create innovate solutions for the companies within the assignment. This course enables the students to learn both the theoretical and practical knowledge of designing and developing processes in the engineering industry, and through this, become familiar with the activities involved in the innovation process. The students learning occurs in diverse ways: through self-study, counselling and guidance, as well as with the help of fellow students and teams. The lecturer's role is to be a coach and facilitator.

The lecturer wants to use the online FIB for students' self- and peer-assessments as they want to assess student learning outcomes using an alternative tool than traditional tests and examinations. The FIB also encourages collaborative learning amongst the students and allows them to receive peer feedback on their innovative capacity. The lecturer wants to support the students in self-reflection and increase their awareness of the important aspects of innovative behaviour.

The lecturer invites the students to complete the FIB individually, using the online platform, at the beginning of the course at a time when the students are setting their personal goals and objectives. They then ask them to complete the FIB self-assessment again at the end of the course, along with a peer-assessment for each individual.

At the end of the course the lecturer uses the results of the self- and peer-assessments to form a better overall picture of the students' innovation competences, and uses the results in formative and summative assessments. The lecturer also attains important information and feedback about the functionality of his pedagogical practices and methods. At the same time, the students use the results of their FIB assessment as a personal developmental tool, using the personal development report generated by the system – this allows them to recognise their own strengths and weaknesses in the context of innovation from their own and peers' perspectives.

Case Study 2

Universities are redesigning their curricula in order to provide students with competencies required in current and future working life. In addition to study-field or profession specific competences, generic innovation competencies are expected as learning outcomes, and therefore must be embedded into curricula.

To be able to generate and develop innovation competences as well as to assess them, universities can integrate FIB in their curricula in all study fields and degrees. Because innovation competencies can seldom be developed in a short time, it is recommended to assess their development throughout the length of study. This can be implemented so that first, all new incoming students self-assess their innovation competence by using the FIB at the beginning of the first academic year, after they are acquainted with the dimensions of the FIB. After that, they self- assess the development of their competencies on an annual basis to follow their progress. During the annual self-assessment, students have development discussions with their tutor. In these discussions, the tutor and the student together go through the student's innovation competence levels, using a personalised development report, and set learning goals for the next academic year.

As the student enters their graduating year, they have generated a better understanding of their own level of innovation competence. The FIB assessment tool requires the student to monitor their own learning as they reflect on their achievements during the studies, and to demonstrate if they have met or exceeded the standards of their degree studies. A personal development report, giving examples of innovation competence achievements, is also a good additional diploma supplement in their CVs and helps students to describe their own competences in a concrete way, e.g. in recruitment situations. Additionally, the employing companies benefit from the newly educated professionals who possess better qualifications than earlier and who are better prepared to operate in diverse innovation processes in working life.

2.4 Getting started

The FINCODA toolkit system offers the opportunity to all organisations and institutions free registration and the benefits of FINCODA Innovation Barometer. You can access the FINCODA toolkit website here:

http://fincoda.dc.turkuamk.fi

You will find eight video tutorials on the website that demonstrate how to use FINCODA system. Additional information on the system is provided below.

<u>System User Types</u>

When a user registers an institute, that user will be registered automatically as the 'administrator' of that organisation. The system has three different user roles:

Administrator role (Organisational scope)

The individual who first register their organisation or academic institution will be by default the administrator. Administrator users can:

- o Add other administrators or assign 'special users' – see next role type
- o Create groups and assign members to it
- o Enable / disable users, as well as delete a user's profile from the system
- o Create self/peer surveys
- o Edit / delete surveys
- o View survey results
- o Print survey reports
- o Download surveys data
- o Update the organisation / institute profile and personal profile

Special role (Group scope)

Individuals using the role type could be department heads, managers or supervisors in an organisation or teachers and tutors in an academic institution. Special users can manage many groups and are able to:

- o Create group self/peer surveys
- o Edit / delete surveys
- o Select specific users from the group to participate the survey
- o View survey results of their own groups

- o Print survey result of their own groups
- o Download survey data of their own groups
- o Update their personal profile
- o Participate into institute / organisation wide surveys as well as their own group survey

Basic role: Individuals using this role can be employees or students. User of this role can:

- o Participate in self/peer surveys
- o Check their personal results and compare them to institute/group average
- o Print their own survey results
- o Download their own results
- o Update their profile

Registering an Organisation or Institute

1. Visit FINCODA toolkit website http://fincoda.dc.turkuamk.fi

2. From the main page click on **Register** then select **Organization**

3. Fill in the organisation information as well as personal information to become an **Administrator** :

Provide you basic information
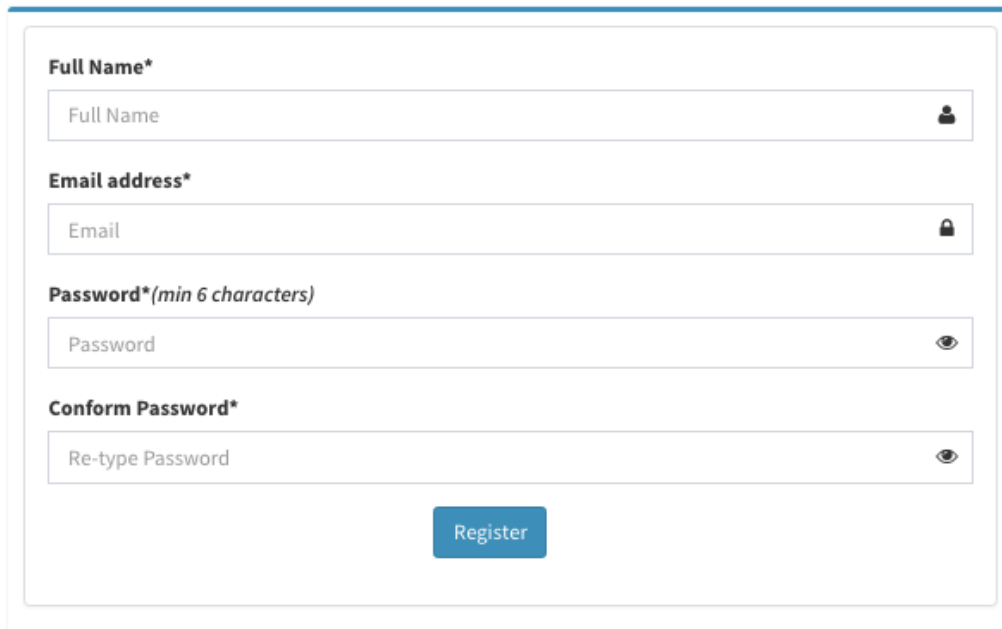*Please provide all the basic information of your organisation.*

Organisation Name*

Name of your organisation

Organisation Type*

Education/Business/Transport

Select Country*

Finland

City*

City

Provide the Administrator detail below
Please provide your basic information.

Full Name*

> Full Name   👤

Email address*

> Email   🔒

Password*(min 6 characters)

> Password   👁

Conform Password*

> Re-type Password   👁

> Register

4. The **Administrator** will receive an automatic email that contains the **Organisation code**.

5. The **Administrator** should distribute the **Organisation code** to all members of the institution and ask them to register on FINCODA Survey System: http://fincoda.dc.turkuamk.fi.

Registering as an individual user

1. Visit the FINCODA Survey System here: http://fincoda.dc.turkuamk.fi

2. From the main page click on **Register** then select **User**

3. Enter the **Organisation code** provided by your organisation / institute administrator and fill in the required information

4. Once users are registered, they become **Basic** users.

Provide your Organisation Code

Organisation Code*

> Organisation Code

Provide the Detailed Information below

Full Name*

> Full name

Email Address*

> Email Address

Password*

> Password

Conform Password*

> Re-type Password
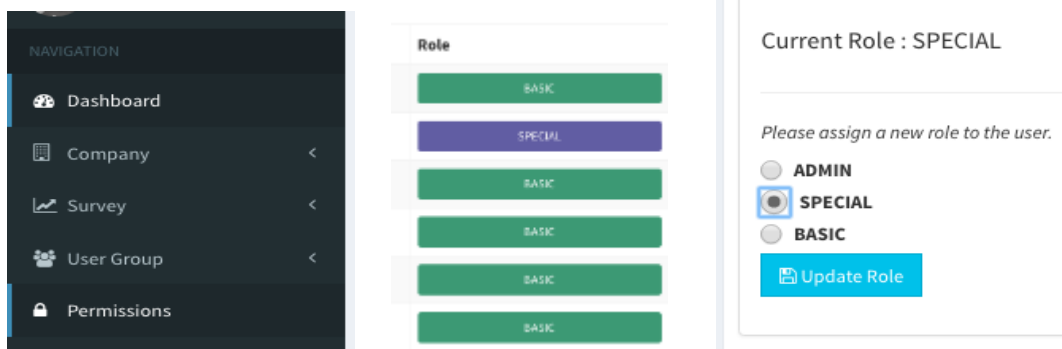
[Register]

Changing a user's role

1. Login as administrator
2. From navigation click **Permissions**, you will see all the registered users and their roles

3. To change any user role, click on their **role** and select the new role
4. Click on **Update** and the user role will be changed.

Creating a group on the system

1. Login as **Administrator**

2. From navigation click **User Group** and select **Create New**

3. Fill in **User Group Name** and **Group Description**

4. Click **Assign a group administration** and select one of the **Special** users

5. Then from **Select users to the group** section, the **Administrator** can assign members to the group

6. Click on **Create Group**

Creating an Organisation- or Institute-wide Survey

1. Login as an **Administrator**

2. From the navigation click **Survey** and select **Create New**

3. Fill in the **Survey Title**

4. Modify the **Survey Description** if needed

5. Choose the survey **Open and Close Dates and Time** then click **Apply**

6. Choose the required survey type from **Select a Survey Type**

7. You can view the survey indicators by click on **Survey indicators**

8. You can view all the participants by click on **Survey Participants**

9. You can add **Survey Completion Text** that users will see once they have completed the survey

10. Click **Create Survey**

- If a survey is in the **Pending** stage the survey administrator can edit the survey

- Once the survey has the **Open** status the system will send a notification email to all participants

- The system will send two reminders, to users who have not responded, before the survey close date (one-week and three-days prior to the deadline set)

Viewing the results of surveys

1. Administrator could view all surveys from **Dashboard** or by click **Survey** then **Survey Results** (if the survey is closed)
2. Administrator could click **Overview** to view the overall performance of the five dimension
3. Administrator could click **Detailed View** to compare a specific user to overall performance
4. Administrator can print the report in PDF format and download the survey complete data in Excel format if needed.

3. Further Information

3.1 Statistical analysis of the Barometer

The barometer was developed using factor analysis (see Butter & Van Beest, 2017) on a combined set of student data (N=316) and worker data (N=194). The original set of 62 items was reduced to a final set of 34 items. The analysis showed that creativity items and critical thinking items are loading on the first dimension. Teamwork items are loading on the second dimension and initiative items and networking items are loading on the third dimension. The FINCODA scales are reliable (Cronbach's α is .87 on average). This result is largely in line with the three categories of innovation competences: individual, interpersonal, and networking, defined by Kairisto-Mertanen et al. (2011) and Kettunen (2011) et al. For substantial reasons creativity and critical thinking are considered as related, but separate facets of the personal innovation competences dimension. Likewise, initiative and networking are related, but separate facets of the networking (incl. proactivity) dimension. Butter and Van Beest (2017) also show in their mixed-method validation study that the FINCODA scales correlate with personality factors in a meaningful way. Also, the criterion validity seems satisfactory. The FINCODA dimensions are positively and significantly related to all three types of criterion measures: 1) self-ratings of innovative behaviour, 2) managerial ratings of innovative behaviour, and 3) real life examples of innovative behaviour. Also, the barometer shows incremental validity above general personality.

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3.2 Academic Literature and References

Below you will find academic references to papers published by FINCODA partners relating to Innovation Assessment and Competency measurement. Further papers related to the FINCODA project and outputs are in press and under review. These will be available in future versions of this guide.

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