Female Empowerment in Science and Technology Academia

Expert Report 3.1

Development, operation and evaluation of the FESTA Strategic Career Manager (FESTA - SCM).

Available at: http://proisis.lero.ie/festa/App/Consult

SEVENTH FRAMEWORK PROGRAMME

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ABSTRACT

FESTA Strategic Career Manager (SCM) was developed as part of work package 3.1 – individual awareness raising - to support junior- to mid- level female researchers and academics in managing their careers in academia. Populated with data derived from interviews with 106 academics and researchers in Bulgaria, Denmark, Ireland and Turkey, the SCM is a user-friendly, web-based decision support system, which provides users with a personalised career profile and guides them to make strategic career decisions in order to progress their academic careers. This report outlines the development, implementation, operation and evaluation of FESTA-SCM.

Executive Summary

This report outlines the development, operation, implementation, and evaluation of the FESTA Strategic Career Manager (SCM), which is a web based tool designed to support early- and mid-level academics and researchers to manage their careers in male dominated environments. FESTA-SCM is available at http://proisis.lero.ie/festa/App/Consult.

The aim of this project is to empower women to strategically manage their careers, to increase women's awareness of the institutional procedures and politics that influence their work and careers, and help them to navigate the academic career system. Four FESTA partners participated in this work package on individual awareness raising : universities in Bulgaria, Denmark, Ireland and Turkey. Interviews were conducted with women and men at early- mid- and senior-levels in the four case study universities who reflected on their careers. Of particular concern are the differences between men and women at similar levels within the universities and the differences between those who are at the start and those at the top of the career hierarchy. FESTA-SCM was developed using already available software (aSPIRE) which was populated with data collected from 106 academics and researchers at early- mid- and senior- levels in four case studies who were interviewed about their careers.

During Summer 2016, FESTA-SCM was rolled out and evaluated in the seven FESTA partner organizations. Respondents completed an online survey, which contained open and closed questions designed to measure reaction, learning, behaviour, results and provided an opportunity for free form comments and suggestions. Respondents in all FESTA partners evaluated the SCM. Reactions to FESTA-SCM were largely positive on the dimensions: first reactions; ease of navigation; relevance of content; new learning as a result of content; act on the recommendations in the SCM; and recommend the system to others. Respondents were positive about the concept of the SCM, but commented on issues relating to content, technical issues regarding access, issues with the user-interface and made suggestions for improvement including resolving the technical issues, providing explanatory notes and ongoing support.

Future plans involve exploring funding options in order to address the comments raised in the evaluation, including rectifying technical issues, reviewing the content and provision of support as well as exploring the feasibility for broader commercial use.

Table of Contents

List of Figures and Tables

1. Introduction

Female Empowerment in Science and Technology in Academia (FESTA) is an EU-funded action-research project concerned with women's under-representation at senior levels in Science, Technology, Engineering and Maths (STEM) disciplines internationally. FESTA research focuses primarily on cultural, structural and organizational factors which impede women's progress in STEM. A number of sub-projects are contained within the overall FESTA project, primarily concerned with organizational processes and practices such as *Perceptions of Excellence in Hiring Processes; Gendering Decision Making and Communications Processes; PhD Supervision; Gendering Meeting Cultures; and Gendered Quantitative Indicators and Organisational Awareness Raising.* Because gender also operates at individual, as well as organizational levels, this sub-project *(individual awareness raising)* was undertaken to raise awareness of the ways gender operates at individual levels, specifically in relation to the way gender affects the different career trajectories of women and men in STEM. The aim of this sub-project is to empower women to strategically manage their careers, to increase women's awareness of the institutional procedures and politics that influence their work and careers, and help them to navigate the academic career system, both with training and by creating a software tool which will aid them in their career decisions.

This report describes the development of the decision-support software tool: FESTA Strategic Career Manager (FESTA-SCM) which is based on the research carried out during Work Package 3.1, as well as its implementation and evaluation. The design of the software is outlined in chapter two, the research methodology, data collection and analysis is discussed in chapter three, the development of the knowledge base which populated FESTA-SCM is outlined in chapter four. In chapter five the introduction and roll-out of FESTA-SCM is described as well as the evaluation of FESTA-SCM by academics and researchers in the seven higher education and research institutions involved in the overall FESTA project. In chapter six, the report draws conclusions about the effectiveness and usefulness of FESTA-SCM and outlines future directions for this decision support software.

2. Design of FESTA-SCM

Available at: http://proisis.lero.ie/festa/App/Consult

The FESTA Career Development Management System (FESTA-SCM) was developed to support early- and mid-level academics and researchers to strategically manage their careers in male dominated environments. The objective of the FESTA-SCM is to facilitate women to make career advancing decisions, based on cross national data on academic careers, to increase their awareness of the institutional procedures and politics that influence their work and careers, and help them to navigate the academic career system, so as to achieve academic success.

The FESTA Career Development Management System (FESTA-SCM) was developed building on already available software, developed in Lero at the University of Limerick. This decision-support software, known as aSPIRE, is a system used for the global teaming model (Noll et al, 2014). This approach is based on the use of process patterns. First conceived as a way to document building architecture design solutions (Alexander et al, 1977), patterns have been used by software developers in the form of design patterns, organizational patterns, and process patterns. In general, a pattern starts with a description of a specific problem (design, organizational, or process) that the pattern addresses. Background is included that explains the problem, the context in which it occurs, and other information to help the reader to understand the problem and its solution. The key pattern component is the solution, which describes, as a succinct set of specific tasks or interventions, how to address the problem. References to related patterns that provide alternate or complementary solutions are included. References to the research literature from which the pattern was derived can also be included as well as empirical evidence for the grounding of the pattern, and sources of further reading for interested readers.

The use of patterns is relevant to the problem of women's under representation at senior levels in STEM, as it is possible to identify specific problems in relation to aspects of academic careers, identify solutions and provide both empirical evidence and international research literature pertaining to each of these aspects. A pattern-based approach facilitated the realisation of several benefits. First, recommendations designed as patterns

provide FESTA-SCM with the necessary depth to be useful in practice, without overwhelming the user who is looking to develop a career plan. Second, the context and provenance of each pattern's recommendations are presented, allowing users to verify both the applicability and validity of the recommendations. Finally, a pattern-based approach significantly reduces the overhead of translating research results into a formal notation usable by a decision support system.

A Decision Support System (DSS) is defined as 'a system under the control of one or more decision makers that assists in the activity of decision making by providing an organized set of tools intended to impose structure on portions of the decision-making situation and to improve the ultimate effectiveness of the decision outcome' (Marakas, 2003). A DSS couples the intellectual resources of individuals with the capabilities of the computer to improve the quality of decisions (Keen and Scott-Morton, 1978). Such a system typically consists of three components: inference engine, user interface and knowledge base (Holsapple and Whinston, 1996). DSS improves human decision-making expertise because the effectiveness of human decision making deteriorates with complexity and stress. The use of a DSS allows its users to conceive solutions and respond to situations quickly. It promotes learning or training, generates new insights into problems and prevents tunnel vision (ibid).

Approach

We have incorporated the process pattern approach into a Decision Support System framework called FESTA Strategic Career Manager (SCM). Our goal was to develop a useful product for people interested in career development, while allowing us to structure the knowledge collected and analysed by the FESTA Work Package 3.1 team into a usable format. The approach we adopted for FESTA-SCM is based on the concept of process patterns. This approach has two advantages:

1.   Patterns present solutions in a concise format that is familiar to practitioners.

2.   Patterns are straightforward to create from existing research results.

As previously stated, the Decision Support System must contain three components: inference engine, user interface and knowledge base.

Inference Engine

We used the Lero aSPIRE system as the basis for FESTA-SCM. This system was developed originally to support the Global Teaming Model (Richardson et al., 2012) and was easily accessible for the FESTA knowledge base. FESTA-SCM is deployed as a web application. The Knowledge Base contains triggers and rules for the inference engine. The inference engine is a rule based decision system. Triggers define when the FESTA-SCM should recommend a pattern. Patterns are contained in a semantic wiki that allows individual programmers to add and edit patterns using a web browser. Users can browse the pattern library in the same fashion as any static web site.

User Interface

The user interface in the FESTA-SCM is similar to that used in Lero aSPIRE. When a user logs onto FESTA-SCM, a menu appears on the left of the screen as follows:

Figure 1:   Menu.

4
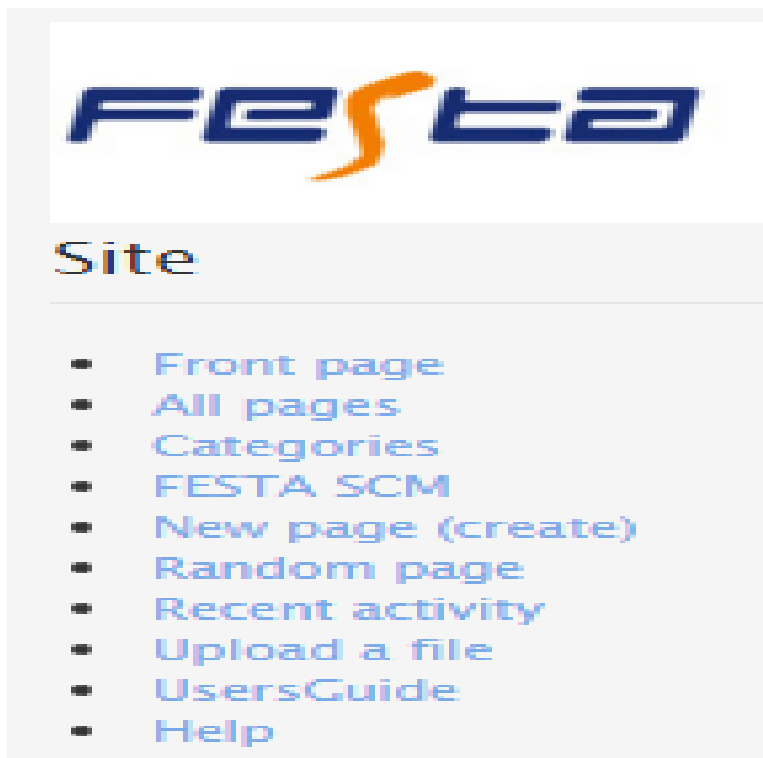
The user then clicks on FESTA SCM and is presented with a set of interview questions which captures the characteristics of the user. This results in users being recommended to focus on particular actions to suit themselves, presented in a ranked order of importance.

Figure 2: Career Stage Interview

Career Stage Interview

Career level

How would you describe your career level?
- Junior level
- Mid level

Degree level

Have you a PhD?
Yes ○ No ○

Research Fame

Where are you known for your research?
- Locally
- Nationally
- Internationally

Availability

How long could you take up a position abroad?
- 6 months or less
- 12 months
- greater than 12 months

Teaching level

What is the highest level at which have you taught?
- Undergraduate
- Postgraduate
- PhD supervision
- None

Teaching duration

How many years have you taught?
- less than 1
- greater than 1
- greater than 3
- greater than 5

Publication strategy

Do you have a publication strategy?
Yes ○ No ○

Network Visibility

How would you describe your network?
- Local
- National
- International

5

Knowledge Base

The knowledge base within FESTA-SCM enables users to be presented with recommendations based on their personal profiles. Chapter 4 of this report outlines how the data from the FESTA empirical research was restructured into the FESTA-SCM Knowledge Base.

This chapter outlined the design of the FESTA-SCM. The next chapter outlines the methodology for the collection and analysis of the data.

3.   Methodology

Four case studies were undertaken on universities in Ireland (UL), Bulgaria (SWU), Denmark (SDU) and Turkey (ITU). As careers are a combination of subjective experiences and objective facts, we specifically investigated critical incidents, positive and negative factors which influenced careers and individual and organisational supports. Documentary review was also conducted in the case study organisations to examine policies regarding hiring and promotion which can advance careers in the universities. The career trajectories of men and women at early- mid- and senior-levels were investigated to determine those factors which advance or impede a career in academia and a critical realist approach was adopted (Scott, 2005). The methodology is both processual and reflexive, in the grounded theory tradition (Padgett, 2008). The study uses qualitative methods because it is concerned with peoples' subjective experiences.   Exploring men's and women's career trajectories in four universities, this study enhances understanding of STEM careers and gender.

In order to understand the career trajectories and people's experiences of their own careers, interview guides were developed designed to enhance understanding of the phenomena of men's and women's career trajectories and their relationship to women's underrepresentation at senior levels in the four universities. The questions driving this study are *What are the differences between men's and women's careers? What are the critical points in a career trajectory? What organizational and individual factors advance or impede men's and women's academic careers?* The research methodology was designed to provide answers to these broad questions, as well as to provide sufficient knowledge to generate theory from the data collected.

The lead partner (UL) developed a series of questions for the interview guide designed to provide knowledge of the meanings given to these concepts by organisational actors. These questions were informed by the international literature on academic careers, but modified by partners to fit local contexts. Guides contained a combination of open and closed questions, as well as reflections on critical incidents (Interview guide appendix A).

The research sample included both men and women, based on their positions and their gender. It was expected to include a sample of 50/50 men and women, but the research team agreed not to compromise by including alternative positions (higher or

lower) where there was no female comparator, in order to highlight women's under-representation in STEM. The numbers of men and women at different positions in the four case studies was established and positions at early-, mid-, and senior-levels were selected at points where there appeared to be critical thresholds, i.e., the points at which the numbers of women increase/reduce dramatically. Overall the sample included 106 individuals: fifty-seven men and forty-nine women, selected from a total of 1106 potential respondents at different levels.

Table 1: Participants in research sample and in total organizations by academic position and gender

Level	Position	Research Sample			Total Organizations		
		Male	*Female*	*Total*	*Total Males*	*Total Females*	*Overall total Organizat-ions*
Senior	**Professor/ Professor MSO**	**17**	**12**	**29**	**145**	**68**	**213**
	Associate Professor	**12**	**13**	**25**	**125**	**52**	**177**
	Senior Research Fellow	**3**	**0**	**3**	**17**	**0**	**17**
Mid	**Assistant Professor**	**9**	**9**	**18**	**128**	**77**	**205**
	Lecturer above the Bar	**3**	**3**	**6**	**62**	**14**	**76**
	Research Fellow	**3**	**2**	**5**	**14**	**5**	**19**
Early	**Lecturer below the Bar**	**3**	**3**	**6**	**35**	**14**	**49**
	Postdoc	**3**	**3**	**6**	**36**	**25**	**61**
	Teaching Assistant/PhD	**4**	**4**	**8**	**147**	**142**	**289**
	Total	**57**	**49**	**106**	**709**	**397**	**1106**

Interviews were conducted with men and women at early- mid- and senior-levels in the four universities. Of particular concern were the differences in career paths in the different universities, between men and women at similar levels within the universities and the differences between those who are at the start and those at the top of the career hierarchy.

There were different methodological practices for conducting empirical research in these different organisations. Formal ethical approval was not required in three of the universities and was required and received in the fourth. In all cases, respondents signed consent forms. In three universities, information letters, brochures and project information was provided to respondents prior to interview. All interviews were recorded and transcribed. In two universities respondents received transcripts post interview.

Qualitative data analysis software was not available in the four languages, so manual data analysis was conducted, using a content analysis approach. Content analysis was used, because it is a systematic, replicable technique for compressing many words of text into fewer content categories based on explicit rules of coding (Krippendorff, 1980; Weber, 1990). Each unit of analysis was a word or piece of text from the interview transcripts. Each of the questions was linked to a code and these were sorted into emergent categories and themes, and then into meaningful clusters for analysis. A cross-national coding map was developed linking codes to categories, clusters and themes. Analysis of the qualitative data involved extrapolating conceptual categories from the codes, followed by cycles of further coding, categorisation and theory building through the emergence of categories in the data (Charmaz 2006, p. 188). Coding facilitated 'fracturing the data' (Holton 2007, p. 266) which was then brought together in new ways that conceptualised and explained what was emerging. Themes which emerged from the analysis include a multi-level analysis of the operation of gender; social support (men's invisible advantage); masculinities; femininities; the family and academic capitalism. This analysis facilitated the production of recommendations and categories which were used to populate the knowledge base for FESTA-SCM which is outlined in the next chapter.

4. Development of the knowledge base

The data set involves the accounts of 106 academics at early- mid- and senior-career levels, who reflected on their careers, specifically critical incidences, barriers and enablers, as well as their ambitions and career goals. Following data analysis, FESTA Researchers in the University of Limerick (Dr Clare O'Hagan) and the University of Southern Denmark (Ms Liv Baisner) identified fifty recommendations and developed them into the pattern structure. In addition to identifying recommendations, the WP3.1 Research team also grouped them into categories and sub-categories (See Table 2). Once recommendations were identified, it was possible to develop the knowledge base for FESTA-SCM.

Development of the Knowledge Base

The Knowledge Base was developed in 5 steps:

1. Structure each recommendation for Career Development into a pattern format.
2. Group recommendations into categories.
3. Devise Career Stage Interview questions.
4. Allocate recommendations depending on the answer to each question.
5. Rank recommendations in order of importance.

1. Structure recommendations into pattern format

A pattern is a structured document comprising a set of pre-defined sections; this means all patterns in a given pattern language have the same general structure, making it easy for readers to find information. Process patterns document solutions to issues and the recommendations that should be implemented to achieve specific goals. For FESTA-SCM, patterns are the result of distilling empirical career research, developed during Work

Package 3.1 (individual awareness raising) into concise descriptions of a problem or goal and its solution.

Figure 3: Pattern from FESTA-SCM – Promote your work

Promote your work

Importance 14

What

Promote your work

Why

International visibility is of crucial importance for a research career. Your sense of entitlement influences all aspects of your life in academia: how you network, how you negotiate, how you discover opportunities, how you collaborate

Evidence/Proof

'It is prerogative for career progression that you are invited for scientific meetings and present your own research' (female researcher FESTA project, 2014). Valian argues that to be successful in academia, and in other areas, it is important to negotiate effectively. To do that, 'one must have a feeling of (at least moderate) entitlement; but women tend to be low in entitlement and men tend to be high' (Valian 2005:205). Valian, V. (2005) 'Beyond Gender Schemas: Improving the Advancement of Women in Academia.' Hypatia. 20 (3) 198 – 213.

Ways to get it

1. Present papers at conferences
2. Become an invited Keynote Speaker
3. Publish in International Journals
4. Find a body and promote each other
5. Develop your sense of entitlement

Related Patterns: Build a high profile . Awareness of Entitlement

Each process pattern comprises the following main components:

Recommendation title (What): A pattern's name is important because it can convey the purpose of the pattern and the actions or practices it recommends.

Importance: All Recommendations are ranked. These can be used as guide to help decide the order in which users will implement their personal Recommendations.

Problem or goal (Why): Describes, in one or two sentences, the problem that will be solved, or the threat to success that will be averted if the recommendation is implemented.

Evidence/Proof: This section presents the evidence from the research and/or the international literature which demonstrates why / how this recommendation has worked.

Solution (Ways to get there): Short list of specific actions to take to implement the recommendation.

Related patterns: Some patterns have strong relationships with other patterns – this section captures these relationships.

References: Provides links to the literature from which the pattern is derived, if any.

2.   Group the recommendations into categories.

Once the patterns were developed from the original fifty recommendations, which were obtained from data analysis, it was possible to group the patterns according to categories and sub-categories, with which a knowledge engineer then populated FESTA-SCM. This facilitated a succinct presentation of results to the user. Table 2 shows the final list of recommendations (50), sub-categories (8) and categories (3).

Table 2:   Recommendations, sub-categories, and categories.

Recommendations (Patterns)	Sub-Categories	Category
-Acquire negotiation skills -Acquire familiarity with different negotiating styles between genders -Build a sense of your own entitlement -Understand gender stereotyping -Understand unconscious gender bias	Communication	Career Management
-Access those with positional authority -Build a high profile -Build allegiances or coalitions support -Know informal decision making process -Networking with powerful others -Obtain management power -Obtain patronage of powerful others	Power Politics	
-Family support -Know your challenges -Know your priority -Learn time management techniques -Manage your priority -Negotiate deals	Work-Life-Balance	
-Gain prestige within organisation and externally -Know the excellence criteria -Family supports -Supervise PhD student -Understand power structures -Understand the rules of the career game -Write funding proposals	Career Planning	Career Planning Steps
Awareness of entitlement -Awareness of gender bias -Awareness of gender differences -Awareness of resistance -Demand recognition -Develop awareness of promotional game and decision making roles	(Gender) in academia	
-Find a mentor -Get a sponsor -Know unwritten rules of advancement -Know your individual support structures -Know your institutional support structures -Promote your work -Select a PhD supervisor carefully -Utilise career development services	Institutional Supports	
-Achieve duly recognised research results -Develop relationships with established academics and publish jointly -Develop relationship with journal editors -Publish strategically -Target high impact journals	Publication Strategy	Career Recognition
Acquire international visibility -Be mobile -Extend your network -Join research consortia -Know your competitors -Study abroad	Professional (Visibility) and Networking	

3.   Devise Career Stage Interview questions.

The real value of a library of patterns is the ability to select those patterns that are relevant to a specific context. Each pattern, therefore, needs a trigger that defines when FESTA-SCM should recommend the pattern. These triggers were developed by devising a set of questions – the Career Stage Interview – through which the system can develop a user's personal profile.

To identify the interview questions, a focus group was assembled consisting of ten researchers employed by the University of Limerick in Science and Engineering research centres at post-doctoral, research fellow and senior research fellow level. Dr Clare O'Hagan, FESTA, who is the WP3.1 task leader, presented the background to the project, and summarised the recommendations devised from the research. Prof Ita Richardson, who was responsible for the development of FESTA-SCM, presented Lero aSPIRE's capabilities. Dr John Noll, who developed Lero aSPIRE, presented information about Lero aSPIRE's inference engine.

Facilitated by Dr O'Hagan and Prof Richardson, the focus group developed a Career Stage Interview. This consists of elements within a researcher's career and relevant stages on the research career ladder cross-nationally. These are presented within FESTA-SCM to each user, allowing them to identify their own personal profile. Within FESTA-SCM these are presented to the User as the Career Stage Interview (see Figure 2).

4.   Allocate recommendations depending on the answer to each question.

Academics and researchers involved in FESTA (either as partners in work package 3.1, or members of the Scientific Advisory Group), examined the recommendations and allocated each one according to relevance. In pairs, they were required to examine between five and eight recommendations relating to each of the answers in the Career Stage Interview, and decide whether this recommendation was Relevant, Not Relevant or if they were Undecided. Following this meeting, the University of Limerick researchers made a final decision on whether the 'undecided recommendations' should be Relevant or Not Relevant, eight per cent of recommendations were thus decided. We are satisfied that error introduced at this stage in the process is not significant, given that this is designed as a Decision Support system, and each researcher using the system is normally given in the region of 20 recommendations. The 20 recommendations are the outcome of the process,

following each user's completion of the career stage interview. Therefore, allowing for this error, they will receive at least 18 recommendations which are useful to them, and there is no requirement for them to accept all recommendations.

Using the output from this stage, triggers were expressed using FESTA-SCM's rule definition syntax and written by a knowledge engineer in developing the system.

5.   Rank recommendations in order of importance.

When a researcher completes the Career Stage Interview, it is likely that they will be given in the region of 20 recommendations which they should follow. To make their development of an action plan easier, we ranked all recommendations in order of importance. To do this, we asked researchers in all partner institutions to complete a questionnaire in which they ranked recommendations as: Extremely Important, Very Important, Important, Somewhat Important, A little Important. Each of these was valued at 5, 4, 3, 2, 1 respectively. The value of each recommendation was taken as the average of all returned results (10). To reduce bias, we circulated 26 different questionnaires with the recommendations presented in a different random order in each. Each recommendation is now shown on the system with its ranked order of importance. This will support users in making decisions about their career plans.

The next chapter outlines the implementation and evaluation of FESTA-SCM in the seven partner FESTA institutions.

5. Implementation and Evaluation

In software development terms, implementation is the term used to describe the state of software being available for use and being used internationally. We use the term implementation for the introduction and roll-out of the FESTA SCM in the partner organizations. Once FESTA-SCM was populated with all recommendations, the system was piloted among the FESTA Project Team and with researchers locally at the University of Limerick, and a user guide was developed to facilitate its implementation. FESTA-SCM was officially launched in the University of Limerick on 12th May, 2016, by Professor Eileen Trauth and demonstrated by Dr John Noll.

Implementation

The design and plan for implementation (including the user guide) was developed by UL and circulated to all FESTA partners on 12th May, 2016 (Appendix B). It was envisaged that FESTA-SCM would be circulated widely in the partner organisations, following which the FESTA researchers in each organization would invite 15 people (5 each at early-, mid- and senior-level) to evaluate the SCM. An online survey was designed to facilitate simultaneous evaluations across all seven partners https://www.surveymonkey.com/r/9XLK9YL. However, implementation was not uniform in all contexts. Three FESTA partners are not involved in this work package, and were asked to introduce and evaluate it in their organizations, with little prior knowledge of the FESTA-SCM. Colleagues in the University of Uppsala asked that Dr Clare O'Hagan from the University of Limerick would introduce the SCM while giving workshops in Uppsala in June 2016. Colleagues in Fondazione Bruno Kessler (FBK), who are not involved in this work package, introduced the SCM in their organizations, and responded with many technical issues, while colleagues in RWTH introduced and evaluated the SCM without difficulty.

FESTA-SCM was introduced to target groups in the seven FESTA partner organizations and a total of 56 evaluations were received, being a 53 per cent response rate of the intended sample of 105.

Evaluation

Academics and researchers were asked to use the SCM and evaluate it. An evaluation questionnaire was designed with reference to Kirkpatrick's (1959) evaluation of training model which evaluates initiatives at four levels: Level 1: reaction, which measures how participants reacted to the SCM; Level 2: learning, which assesses what participants have learned and the extent to which their knowledge has increased as a result of using the SCM; Level 3: behaviour, which evaluates changes in participant's behaviour based on using the SCM and Level 4: results, which evaluates outcomes as a result of the SCM. In addition details of the profiles of respondents by gender, length of career and location were collected.

Profile of Respondents

Participants were predominantly female (98 per cent). While FESTA-SCM is designed to facilitate early stage academics and researchers, the lowest number of respondents identified as early stage academics with careers of less than two years (22 per cent), the majority of respondents were established academics, with careers of more than five years (41 per cent), while 37 per cent of respondents were identified as mid-level, with careers of between two and five years. Overall early- to mid- level academics made up 59 per cent of respondents.

Table 3: Evaluation response rate by institution

Institution	No. Evaluations	% of total
South West University 'Neofit Rilski' Bulgaria	13	23
University of Limerick, Ireland	13	23
Istanbul Technical University	9	16
University of Southern Denmark.	7	13
Fondazione Bruno Kessler, Italy	5	9
RWTH Aachen, Germany	4	7
University of Uppsala	1	2
Skipped	4	7
Total	56	100%

Reaction to FESTA-SCM

Reaction questions related to respondents' first reaction to the SCM and ease of navigation.

First reactions were largely positive with 65 per cent describing their reactions as positive: 40 per cent of respondents described their first reaction as 'very positive' and 25 per cent as 'somewhat positive'. There were some negative first reactions, however, and 15 per cent described their reactions as negative: four per cent described their first reaction as 'very negative' and 11 per cent as 'somewhat negative'. Some respondents did not respond either positively or negatively, with 20 per cent describing their first reaction as 'neutral'.

Table 4: Evaluation of Ease of Navigation

In response to questions regarding ease of navigation, the majority of respondents described the FESTA-SCM as easy to navigate.

Extremely easy	Very easy	Somewhat easy	Not so easy	Not at all easy
11 %	38 %	28 %	15 %	8 %

Between 15 and 30 June the SCM was not available due to a technical error and it is speculated that the respondents who found the SCM difficult to navigate may have attempted to access it during this time. The evaluation also revealed technical issues (see below) which would have hindered navigation.

Learning

To ascertain if the SCM facilitated learning, questions were asked relating to the relevance of the content and if the content provided respondents with new learning.

The majority of respondents (85 per cent) found that the SCM was successful in providing relevant career advice, with 15 per cent describing it as 'extremely successful', 38 per cent as 'very successful' and 32 per cent as moderately successful. However, 15 per cent of respondents were not impressed with the content, with 11 per cent describing it as 'slightly successful' and four per cent as 'not at all successful'. It is speculated that these

respondents may have been at late career stage, and the SCM would not be as useful for them. Respondents were asked 'Did you learn anything new about academic careers? , and 69 per cent replied that they did, while 31 per cent did not.

Behaviour

In relation to changing their behaviour, respondents were asked: 'How likely are you to act on the career advice in FESTA-SCM?' The majority of respondents (82 per cent) are likely to adopt the personalised recommendations made by the SCM, with eight per cent being 'extremely likely', 42 per cent being 'very likely' and 32 per cent being 'somewhat likely' to act on the career advice. A minority of respondents indicated that they were unlikely to adopt the recommendations, with nine per cent being 'not at all likely' and a further nine per cent being only 'slightly likely' to act on the career advice.

Results

It is assumed that making a recommendation is a positive result of using the SCM and respondents were asked if they were likely to recommend the FESTA SCM to a friend or colleague.

Table 5:   Likelihood of recommending the SCM

Extremely likely	Very likely	Moderately likely	Slightly likely	Not at all likely
22 %	36 %	21 %	6 %	15 %

Free form feedback

Respondents were asked an open question regarding their responses to the SCM as this provided an opportunity for respondents to make free form comments on their experience of using it. More than half respondents took this opportunity with 56 per cent of respondents providing such feedback. Responses were positive regarding the concept of the SCM, while many respondents reported technical difficulties regarding access to the

SCM, issues regarding content, issues regarding the user-interface and many made helpful suggestions for improvement.

Positive reactions to the concept

Many respondents were positive about the concept of FESTA-SCM, with comments such as: 'Useful particularly for young enthusiastic researcher'; 'It is very good idea to create the Strategic Career Manager, especially for the beginners', and: 'I think FESTA Strategic Career Manager is very useful'. A respondent noted that 'It's a very simple, elegant tool for career planning. I hope it's ok to send to a few people as I think it would be of benefit!', while another applauded the concept, but was unconvinced that the SCM could provide practical career support:

> I think using FESTA SCM gives the opportunity to think about the career, and to focus on critical concepts and skills to be developed. I guess it should be used with this aim. I'm not really convinced it acts as a practical support, or tool to improve the career.

Overall, the FESTA SCM and the concept of the FESTA-SCM were received positively.

Issues regarding content

There were positive responses to the content, e.g.: 'Very practical advice. Great to see it all on one place, as it can be difficult to compile information from many sources', and: 'I am grateful for helpful recommendations' and 'Thank you for your useful advice!' However, other respondents were critical of the lack of detail provided: 'Advice given is too generic, e.g. "Ask yourself whether there are reasons for you to feel less entitled to fulfilling ambitions than your colleagues": how is this going to help me in my next negotiation?' Some respondents suggested that more detail in the patterns would be useful:

> I really liked the advices I received. Some of them I have not thought about before, such as negotiation and communication strategies and family support. However, I think what it is hindering a wider application of the platform is the lack of personalisation or of an explanation of how each person can act upon the advices. I do really hope it helps!

Another respondent was critical of the assumptions made regarding user-knowledge, particularly in relation to gender:

> First of all, I really do appreciate your work. If I am to evaluate my experience of FESTA Manager, I can say that I have been looking forward to some additional explanations or briefs in the recommendations... For instance in the "Awareness of gender differences" recommendation topic, there are two entries as "ways to get it"; one of them is "Know your institution's gender equality practices". What I think is, it would have been very helpful if the manager somehow directed us to a guide informing us about gender equality/inequality in academic life, which can motivate us or conduct our demands and expectations from our institutions... I personally think such supplementations can strengthen the work very much. Because not all of us really aware of gender mainstreaming ...Thank you :)

While another advised that using accessible language would be helpful: 'Use an accessible language also for those researchers who are not familiar with gender issues. It took me a while to understand that "negotiation styles" referred to the negotiation of salary'.

Overall, many respondents were satisfied with the content, however, other respondents suggested that more detail regarding the content would be appreciated, in particular in relation to gender and providing detailed explanations regarding the ways in which the recommendations could be achieved. This feedback suggests that a detailed review of the content may be required for some patterns.

Technical issues regarding access

Several respondents experienced difficulty accessing FESTA-SCM. It became apparent following the implementation that FESTA-SCM will not work on browsers other than google chrome or firefox. Unfortunately, this knowledge became available after the SCM had been implemented in all FESTA partners, and was not included in the user-guide. Comments

included: 'Ensure proper functioning on all browsers. Was hard to use on FF/Linux'; and 'The recommendations on the FESTA Strategic Career Manager are not visible on Google Chrome but on Internet Explorer. User can be informed about browser compatibility'.

During the implementation and evaluation period (between 15 and 30 June), FESTA-SCM was inaccessible, which was noted by many respondents: 'Unclear what it is about. Perhaps the pages were not loading properly today', and 'I have tried to access the tool many times and it is just saying that it is not possible to access the server'.

Another issue which emerged during the implementation/evaluation period is that users cannot save their recommendations: 'Is there any way to save my recommendations? This would be important if for example I today generate my recommendations but I decide to read it tomorrow'. A related issue subsequently emerged, that the submissions of the previous user in the Career Interview are not cleared when the system is closed. One respondent noted: 'I have noticed that the system does not clear answers given by other people connected before me. This makes me think that there could be a problem if there are two people inserting the answers at the same time. Or not? Did you check this?'. A further issue which emerged during demonstration of FESTA-SCM is that only one user can access the system at a time.

Feedback on technical issues is a very useful part of the evaluation, and suggests that areas for improvement include being accessible on all browsers, maintaining the system 'live' on all browsers, having capability for multiple simultaneous users, clearing the career interview on system shut down, and saving personal recommendations for future access to the system.

Issues with the user-interface

While respondent evaluations suggest that many found FESTA-SCM easy to navigate: 11 per cent described it as 'extremely easy', 38 per cent as 'very easy' and 28 per cent as 'somewhat easy'. Those who found it difficult (23 per cent) provided detail in their comments. One user noted there is too much irrelevant detail: 'The usability of the tool is really poor. The interface shows way too much irrelevant information that could be easily hidden to the user'. Many users found the visual presentation problematic, with the recommendations being too small to read: 'The idea is brilliant. However, the usability of

the system should be improved. For example, it is not clear how the box with recommendations can be enlarged to offer a more readability of the text' and: 'The image of the recommended patterns can't be zoomed in Internet Explorer, so the elements of the image can't be read'; 'It is not very easy to read the recommendations part'; 'It is difficult to read the recommendations in the page. It would be extremely helpful to have bigger characters; and: 'Green/blue bars in "recommendations" are too small!'.

The problem created by the user-interface being difficult to navigate is that respondents do not persist with FESTA-SCM 'Make the flow chart bigger! When you have to actively click on every box to see the heading, it makes you not wanna (sic) put in the effort'. Others became frustrated and dismissed the SCM without investigating the recommendations which would be useful for them: 'It is impossible to see the figure on the right hand side. The tool is useless', and 'the recommendation overview is much too small - the recommendations are somewhat obvious'.

The feedback on improving the visual representation of the recommendations is very important, and will enhance FESTA-SCM.

Suggestions for improvement

Many respondents made suggestions for improvement. Several suggested that an explanatory note would have been helpful: 'Introduce the tool with an explanatory note in the beginning (hard to understand that you have to choose in the left panel) - the right panel is too small and not easy to understand that the single items are clickable - recommendations are ok', and: 'a short introductory Explanation of how to use the Advisor would be great'.

> It would be good to have quick instructions on the career manager page.
> Anything that says "Next, click the recommendation link over there.==>" Or
> something shorter. I was confused about what to do after filling out the
> career interview section. I did not realise that the recommendations were
> happening as I filled out the interview.

Even though a user guide is available, it does not present the information in the way users prefer, and another respondent suggested a progress bar would be one way to provide this information and reduce confusion:

> The system may be improved by adding suggestions on how to navigate the system, for instance the system could better clarify where to start and how and give a short initial overview on the meaning and usefulness of the service and how to have insights from it. I get a little confused when I saw the "career stage interview" already pre-defined (with answer already inserted) and I didn't know what to do and how to proceed. Maybe it could be useful to add a progress bar may help together with more friendly texts.

One respondent suggested that ongoing support would be helpful:

> I would divide the process in two steps/pages: 1. collect answers and 2. present a page of suggestions. - It would be useful to receive the suggestions by email so that a person can read them many times when she has more time - It would be interesting to do this test several times, e.g. once per year, to see if the professional situation has changed and new suggestions come up'.

Suggestions for improvement concern explanations for how to use the SCM, making the recommendations legible, a progress bar to monitor a user's stage in the SCM process and e-mail support on an ongoing basis.

Conclusion

FESTA-SCM was implemented and evaluated in Summer 2016 by respondents in the seven FESTA partner universities. Respondents completed an online survey, which contained open and closed questions designed to measure reaction, learning, behaviour, results and provided an opportunity for free form comments and suggestions. Respondents in all FESTA partners evaluated the SCM, and there was an overall 53 per cent response rate. Reactions to FESTA-SCM were largely positive on the dimensions: first reactions, ease of navigation,

relevance of content, new learning as a result of content, act on the recommendations in the SCM and recommend the system to others. Respondents were positive about the concept of the SCM, but commented on issues relating to content, technical issues regarding access, issues with the user-interface and made suggestions for improvement including resolving the technical issues, providing explanatory notes and ongoing support.

6. Conclusions and Future Plans

This report described the development, operation, implementation and evaluation of FESTA-SCM in seven FESTA partners.

The objective of FESTA-SCM was to develop a useful decision-support software product for people interested in career development, while drawing on the knowledge collected and analysed by the FESTA Work Package 3.1 team. The FESTA Career Development Management System (FESTA-SCM) was developed building on already available software, known as aSPIRE, which had been developed in Lero at the University of Limerick. This approach is based on the use of process patterns. The use of patterns is relevant to the problem of women's under representation at senior levels in STEM, as it is possible to identify specific problems in relation to aspects of academic careers, identify solutions and provide both empirical evidence and international research literature pertaining to each of these aspects. The data set collected for WP 3.1 (individual awareness raising) provided the knowledge to populate the knowledge base for FESTA-SCM, it was structured into patterns, which appear as recommendations for users.

FESTA-SCM was rolled-out in the seven FESTA partners during the summer of 2016, with respondents in each organization evaluating the SCM using an online survey. The evaluation revealed many positive aspects to users' experience of FESTA-SCM, but revealed some technical shortcomings, which can be rectified. Overall the FESTA SCM and the concept were well received.

Future Plans

The FESTA-SCM Decision Support System has been developed based on FESTA Work Package 3.1 Research. It is available on-line for Academics and Researchers to use internationally at http://proisis.lero.ie/festa/App/Consult. It is envisaged that the system can be further developed to overcome technical shortcomings and upgraded. Therefore, we are applying for funding to conduct a feasibility study proposal through Enterprise Ireland, with a view to enhancing the system and possible commercial exploitation.

Appendices

Appendix A: Interview guide

Fexta

Female Empowerment in
Science and Technology Academia

SEVENTH FRAMEWORK
PROGRAMME

Interview Guide 3.1

Thank you for agreeing to participate in this interview to share details of your career progression in academia. This structured interview is designed to develop an understanding of the positive and negative aspects of career progression. First we will talk about your current position, next we will explore your career to date, and in the last section we will look at how you envisage your career development progressing in the future. At the end of the interview, you will be asked to complete a short biographical questionnaire.

Current Position

1) What is your current position within the University? (Clarify: permanent or not?)
2) How long have you been in that position?
3) Could you describe your role? (focus on your responsibilities)
4) Can you describe your work group – the people with whom you interact on a daily/weekly basis?
5) What is the gender composition of your work group?
6) What factors or people were most supportive in helping you achieve this post?
7) Is this your preferred career/career path? If no: what would be your preferred one?

Career Path to date

8) When you look back over your career what do you see as the critical points?
9) Was there a point when your career began to accelerate? - If yes: Why do you think it happened at that stage?
10) Have factors or people been supportive in your overall career progression? Specify
11) Have you met any barriers / obstacles to your career progression? Specify
12) Has gender affected your career progression in a positive or negative way? Specify
13) Have personal or domestic issues influenced your career decisions?
14) How does your progression compare to people of the same age?
15) -   If there is a difference, why do you think that might be?
16) How does your progression compare to people of the same gender?
17) -   If there is a difference, why do you think that might be?
18) How does your career progression compare to people of the opposite gender?
19) -   If there is a difference, why do you think that might be?
20) Have work related mentors played any part in your career progression? Specify
21) – If yes: Have you had male & female mentors? Specify
22) Have work related networks played any part in your career progression? Specify
23) How is research excellence defined in this department /institute?
24) How is research excellence defined in this university?
25) Are there any conditions laid down regarding your supervision of Ph.D students?
26) Do you think activities which give you professional visibility outside your department and/or outside the University contribute positively to career progression?
27) Do you engage in any of these activities which provide professional visibility?
e.g.   Reviewer for International Journals   Member of Editorial Board

28

Editor of journal or book   Professional Consultancy Activity
Forging Links with Industry Partners   Participate in Research Consortia
Making grant applications   External Examiner
Assessor for grant awarding bodies   Media related profiling activities
Keynote / Plenary Speaker at Conferences
Other- SPECIFY

28) Are there any barriers to your participation in activities which would give you professional visibility outside the department / university? What are they?
29) Have you participated in any committees which have helped your career?
30) Have you participated in any committees which have hindered your career?
31) Does your university provide any additional resources to women to help them develop their research career?

Career Path: Future

31) What is the highest level that you would aspire to reaching in the university?

32) Are there any formal procedures for moving upwards in your organisation?
33) If yes: Have you applied for promotion? Why/Why not? If yes, What was the outcome?
34) Do you think the progression process in this University favours male or female applicants? Why? Why Not?
35) If you were to give advice to someone at a more junior level who wanted to advance their career, what would you say to them?
36) Are you thinking of someone of the same gender as you? What about someone of the opposite gender?
37) What factors do you think will affect your future success in this University/ Institute?
38) What personal competencies / characteristics do you think are necessary for a successful career in this University/Institute?
39) Do you engage in any activities designed to develop these competencies? Specify
40) What would help you to move your career forward at this point in time?
41) In five years' time what position do you think you will be in?
    -What about in ten years' time?
42) How similar/different are you to the people who are in management in your area?
    - In what way? (similar? different?)
43) Is there anything else that you want to say about careers?

Pattern Structure: Nine recommendations (patterns) / three categories.

Career Planning Steps:
Demand Recognition
Know the unwritten rules of advancement
Family support

Career Recognition Categories:
Acquire International Visibility
Target High Impact Journals
Join research consortia

Career Management Categories:
Build a high profile
Learn time management techniques
Acquire negotiating skills

Career Planning Steps:

What?	Demand Recognition
Why?	In order to advance your career strategically you need to be recognised as an expert in your scientific field, as well as being an excellent teacher and an active member of the academic community.
Evidence/Proof	'My head of department said to me recently 'you have to be a little bit selfish when it comes to these things and demand recognition because unless you do you're not going to get it'' (Female academic, FESTA) 'If I had been recognised for all the work I had done, my salary would have reflected that and my contract' (Female academic, FESTA) The director sent an email out to the President and the Dean's office and stuff
Ways to get there	- Promote yourself in all the places which have high visibility, faculty newsletters, university magazines, university websites • Make yourself visible, use social media to highlight your achievements - Every time you win an award or a prize, send out a press release to local media and an email to your colleagues - Engage in high profile and high value service activities which get you noticed by powerful others

What?	Know the unwritten rules of advancement
Why?	It is important to know the territory well in ordert o advance your career
Evidence/Proof	'The criteria for promotion are set in details in the current regulations. These are 'number of publications in referred journals', 'number of citations' … and they should be very seriously accounted, if one wants to advance in his/her career' (male academic FESTA project, 2014).
Ways to get there	- Seek out what is valued in the promotion game - Understand the power structure - Consider how you can make yourself strategically placed and the right people know you - Consider how power can be used for you or against you - Know the formal rules - Observe who gets what done and take a stand on how you want to position yourself - Make friends with people with informal power

What?	Family support
Why?	In some cultures family support is crucial for career progression
Evidence/Proof	When my children were small, my mother used to come and help, because the first 2-3 years were very difficult …. When I was trying to get oriented. And also I owe a lot to my husband – if he hadn't been so tolerant my career wouldn't have ever been so successful. For other people, in different circumstances – I don't know. But for me, maybe my perseverance, I myself as a person, maybe. (female academic FESTA project, 2014).
Ways to get there	- Set up reliable support from close relations - Manage your time so that you can achieve your career goals and have good relationships with your family and colleagues - Negotiate deals that make allowances for your situation

Career Recognition Categories:

What?	Acquire International Visibility
Why?	The more visible you are, the more excellent you are perceived to be
Evidence/Proof	'I cannot imagine simply a person who would be visible only locally that could progress anywhere. Not in my area. That is simply impossible. We would not even consider any promotion for a person who is not visible internationally. Not just outside the university but would have to be visible internationally to be considered for any promotion in the system here. So it would be out of the question' (Male academic, FESTA research, 2014)
Ways to get there	- Present papers at conferences - Become an invited Keynote Speaker - Publish in International Journals - Work abroad: postdoctoral opportunities - Obtain an international fellowship/scholarship, e.g. Marie Curie - Become peer reviewer/editor of international journals (preferably prestigious journals) - Become member of national and international research councils and networks - Obtain large excellence funds - Aim of exposing your research/consider media coverage

What?	Target High Impact Journals
Why?	Publication in the most prestigious journals can open doors for funding and promotion.
Evidence/Proof	'When the rules are as they are right now, and there is no real chance that they will change very much in near future, it is quite clear that the focus must be on publishing. Think quality over quantity, it is of no use just to publish a lot, because you have to publish the "right" places' (female academic FESTA project, 2014).
Ways to get there	- Choose the target journal carefully (look at quality lists and read their web pages) - Take advice from senior staff and colleagues who publish - Become a peer reviewer in order to get to know the mechanisms from the other side of the table

What?	Join research consortia
Why?	Joining a research consortia enhances the possibility that you will be offered opportunities or you can propose collaboration to participate in projects
Evidence/Proof	'I definitely can assert that, the experience which I obtain in collaborating with colleagues outside the university has very strong impact on my achievements as well as on the research work of my department' (Male academic, FESTA research, 2014).
Ways to get there	- Participate in university activities that give you access to senior people - Join research consortia - Join industry goups - Join collaborative research groups in your university - Seek out possible research collaboration opportunities in networks and at conferences

Career Management Categories:

What?	Build a high profile
Why?	Building your academic profile can help demonstrate your authority, expertise and research interests
Evidence/Proof	"You have to do well on the five Ps basically. The five Ps are, we call them five Ps here, most people don't actually articulate them like that, but you do have to have, you have an idea, so you do have to have publications. Yea, you do have publications, you do have to have proposal of what we call grant income. So you'd have to get funding from agencies, you do have to, well, practice, practice in companies that's a big thing for Science Foundation Ireland on impact. So you have to have that. You have to have PhD students or students in supervising and you have to have prestige, so prestige is things like service, like editorial boards and like editor of journal special issues or external examiner or keynote speakers, they're all part of prestige…Yea, so those are the factors that I always managed to [achieve]. Always. …So I would know what good publications are so I would have something in every category" (male researcher FESTA project, 2014).
Ways to get there	The 5 Ps: - **P**ublish - Write funding **p**roposals - Supervise **P**hD students - Gain **p**restige - **P**ractice

What?	Learn time management techniques
Why?	Learning time management techniques can improve your work-life balance
Evidence/Proof	'I learned to use time more efficiently after I had a child. Having in mind the responsibilities such as 'I have to look after my child, I have to spend time with my wife, I have to work with my students' positively affects your time management skills' (male academic FESTA project, 2014)
Ways to get there	- Learn time management techniques - Be aware of your values - Manage your priorities - Negotiate deals - Know your challenges

What?	Acquire negotiating skills
Why?	To be successful in academia, and in other areas, it is important to negotiate effectively
Evidence/Proof	´I actually negotiated, I thought, quite well at the time to come in at the second point of the salary scale' (female academic FESTA project, 2014). From FESTA analysis: A female academic subsequently reviewed her negotiation skills when she realised her male colleagues had negotiated salaries at higher points on the scale than she did. However Diana did not place a high value on her own ability 'but that was about the limit of my achievements' (female academic FESTA project, 2014).
Ways to get there	- Learn negotiating skills - Acquire familiarity with different negotiating styles between genders - Do men promote themselves more freely? Do women tend to undersell themselves? - Learn to view a „no" as an invitation to negotiate - Build your sense of entitlement - Research and value your contributions realistically- ask around and do not be shy - Recognize when you negotiate well, what is the outcome? What is the process? How did you ensure a positive result?

FESTA SCM

Launch   In all seven FESTA Partners no later than the first week of June, 2016.

Send out link to software: http://proisis.lero.ie/festa/App/Consult

Evaluation:

Evaluation to take place two weeks after launch.

Evaluator Selection:
   In each of the FESTA partners, select:
   5 women (S+E) whose careers are   0 – 2 years
   5 women (S+E) whose careers are   2 – 5 years
   5 women (S+E) whose careers are   5 or more years

Ask 15 women to
   1. Use the software and

   2. Complete the evaluation survey.

https://www.surveymonkey.com/r/9XLK9YL

Evaluations will be collected online, so that UL can conduct the analysis of the evaluations.

Attached:

   1. **Suggested text for launch of the SCM,**

   2. **Suggested text for evaluators**

   3. **User guide.**

1.   Suggested text for launch of the SCM:

Dear All,
Please find enclosed link to the FESTA Strategic Career Manager (SCM)

<p style="text-align:center">http://proisis.lero.ie/festa/App/Consult</p>

This user-friendly, web-based decision support system is designed for junior- to mid- level Academics and Researchers, and will provide you with a personalised career profile and will guide you to make strategic career decisions in order to progress your academic career.

The SCM is based on empirical research with 106 academics / researchers at early- mid- and senior levels in STEM in four European Universities, who were interviewed about their careers: to date, going forward, and asked to identify factors/critical incidents/people which advanced their careers. The SCM was developed from this data. While the research was conducted with a gender and Science/Technology focus, we expect it to be useful to both women and men, and to academics and researchers from disciplines outside Science/Technology.

The user guide is attached.
We hope you find the FESTA Strategic Career Manager useful.

2.   Suggested text for evaluators:

Dear Colleague

You have been selected to participate in the evaluation of the FESTA Strategic Career Manager (SCM). FESTA Strategic Career Manager (SCM) is a user-friendly, web-based decision support system for junior- to mid- level Academics and Researchers, which provides you with a personalised career profile and guides you to make strategic career decisions in order to progress your academic career.

We would be most grateful if you would take the time to use the career manager and let us know your views by completing the survey: https://www.surveymonkey.com/r/9XLK9YL
Thank you in advance for your support.

3.   User Guide

FESTA Strategic Career Manager (SCM) is a user-friendly, web-based decision support system for junior- to mid- level Academics and Researchers, which provides you with a personalised career profile and guides you to make strategic career decisions in order to progress your academic career.

The SCM is based on empirical research with 106 academics / researchers at early- mid- and senior levels in STEM in four European Universities, who were interviewed about their careers: to date, going forward, and asked to identify factors/critical incidents/people which advanced their careers. The SCM was developed from this data. While the research was conducted with a gender and Science/Technology focus, we expect it to be useful to both women and men, and to academics and researchers from disciplines outside Science/Technology.

Click on
The FESTA Strategic Career Manager will open, with this menu on the left of the screen:
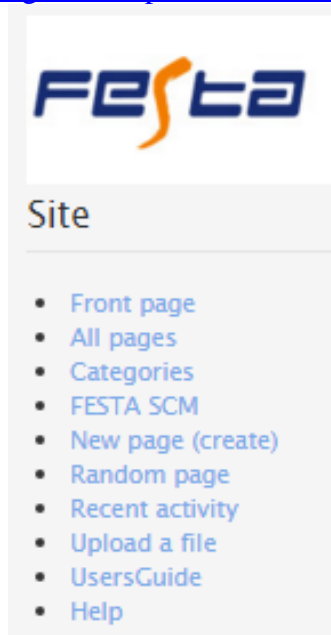
The *Front Page* will bring you to information about the FESTA consortium, and FESTA-SCM will bring you into the strategic career manager.

FESTA SCM

When you click this option you will be presented with this screen

There are two panels – Career Profile and Recommendations. To establish your personal profile, click on each of the questions in the Career Stage Interview, and choose answers from each of the options given. This will generate your personal profile.

You will then be presented with a number of recommendations designed to help you make strategic career decisions. Recommendations are shown in blue and green, blue being those that are based on your most recent answer.

When you click on a recommendation, details of that career activity will open for you. The recommendations include information regarding its importance, its relevance, the evidence base for the recommendation, guidelines on how to achieve it, related links to other recommendations and references to support the evidence base.

You may choose to follow each recommendation suggested in the order suggested; or choose the recommendations you deem to be most important; or change the order of recommendations because you believe this better suits your current situation.

The recommendations are designed to help you to make informed decisions regarding the activities which will be most beneficial for you to advance your career.

We hope you find the FESTA Strategic Career Manager useful.

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