One-stop-shop as an innovation, and construction SMEs

_Citation for published version (APA):_

Documento en español

_General rights_
Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

• Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
• You may not further distribute the material or use it for any profit-making activity or commercial gain
• You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:
www.tue.nl/taverne

_Take down policy_
If you believe that this document breaches copyright please contact us at:
openaccess@tue.nl
providing details and we will investigate your claim.
One-stop-shop as an innovation, and construction SMEs: A Swedish perspective

Georgios Pardalis a*, Brijesh Mainali a, Krushna Mahapatra a

Dept. of Built Environment and Energy Technology, Linnaeus University, SE-35195 Växjö, Sweden

Abstract

This paper examines the views of construction SMEs in Sweden regarding innovations, in particular the one-stop-shop business concept, and its adoption for renovation of detached houses. The investigation is based on interviews with 10 construction SMEs and by applying a conceptual framework for organizational innovation adoption. The results suggest that, even though the one-stop-shop business concept is perceived as a means for growth, at present, construction SMEs in Sweden are unlikely to adopt it at present. This lack of interest is mostly related to the perceived complexity of this model and the underlying risks and uncertainties. That complexity is seen as a preventing factor as it puts at stake their current business. The interviewees proposed that there should be an entrepreneur to coordinate the actors involved in the renovation process, whose role can be further studied.

© 2019 The Authors. Published by Elsevier Ltd.
This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/)
Peer-review under responsibility of the scientific committee of ICAE2018 – The 10th International Conference on Applied Energy.

Keywords: innovation adoption, one-stop-shop, construction SMEs, adopter characteristics, perceptions

1. Introduction

Despite the fact that Sweden is a pioneering country in Europe regarding efficient energy uses, it faces challenges when it comes to investments in building renovations, an obligation deriving from the directive 2012/27/EU. Buildings account for 30% of the total energy consumption in Sweden, and actions towards improving their energy performance are of strategic importance towards achieving the national goals of energy usage. In this context, single-family houses are of great importance, as they represent almost 50% of the total building stock, with 80% of them being more than 30 years old and in need of renovation. However, the renovation market for such houses is fragmented and dominated by small and medium-sized companies (SMEs) offering individual solutions [1]. The

* Corresponding author. Tel.: +46(0) 767808252
E-mail address: georgios.pardalis@lnu.se

1876-6102 © 2019 The Authors. Published by Elsevier Ltd.
This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/)
Peer-review under responsibility of the scientific committee of ICAE2018 – The 10th International Conference on Applied Energy.
10.1016/j.egypro.2019.02.031
SMEs in general constitute, in size, about 99% of the Swedish construction industry. Those companies show an incentive for growth, but that growth imposes for them a series of challenges to be addressed and overcome [2].

To improve the rate of renovation of single-family houses and for the SMEs to grow, previous research has proposed that construction actors may adopt a one-stop-shop business model where a single actor, perhaps in collaboration with other actors, offer full service but tailor-made solutions for energy renovation, including financing [3]. There are examples of different one-stop-shop business models in some Nordic countries [3], but not known in Sweden. The main objectives of this paper are: (1) to study the perceptions of construction SMEs regarding innovation and one-stop-shop in particular; and (2) to examine their level of preparedness to adopt such a business model.

2. Theoretical framework

Construction is a project-based, service-oriented industry. Despite the fact of using new technologies, construction industry suffers from poor inter-organizational collaboration, which is essential for innovation [4]. Innovation in construction involves a variety of participants collaborating at a project level. Those participants are independent organizational entities, with their own agenda and expectations from each project, which makes coordination and integration difficult, thus actual innovation hard to be found [5]. An innovation is considered as something new (e.g. products, services, technology, policy, structure or administrative system) to the individual, organization, industry or broader society that will adopt it [6]. Innovation adoption helps organizations to gain new perspectives and knowledge on existing problems they face, and make them more effective and competitive [7]. A successful innovation adoption means that the organization has accepted and implemented it in its practices, demonstrating commitment to the use of it over time [8].

The framework of organizational innovation adoption [9] (Figure 1) allows us to understand the factors affecting adoption decision. There are internal factors such as perceived innovation characteristics and adopter’s characteristics, which are affected by external factors, like social networks, innovation supplier marketing efforts and influences from the broader business environment. In this paper we focus on the internal factors because they affect the perceptions and preparedness of organizations towards adopting innovations. The perception of an innovation by an organization, and how innovation is evaluated influences the inclination to adopt it [10][6]. The perception of an innovation can be related to compatibility, complexity, observability and trialability of those innovations [6]. Furthermore, perceived uncertainties, like for example market uncertainties and customers’ reactions can create a less safe environment for innovation adoption [11]. Adopter's characteristics such as size, age, structure, and the inclination to innovate, may influence the innovation power of organizations [12]. Organizations, size is correlated to other variables, such as structure, strategy and culture [13]. In terms of structure, smaller organizations are found to be more willing to initiate innovative adoption decisions, but at the same time they are less prepared to implement an innovation. Regarding culture, organizations with an open mind towards new ideas will be positively influenced to adopt an innovation [14]. As far as it concerns strategy, it is important to examine the attitude of organizations. The need to renew the way they do business and their willingness to enter new markets, positively influence organizations to adopt innovations. The age of company is found to affect organizations both positively [15], and negatively [16].

Another parameter that should be taken under consideration has to do with the appropriate treatment of the risks related to the use of the innovation, namely implementation, financial and operational risks [17]. Furthermore, interactions between members of a social network can boost the adoption of an innovation. When members of an organization are active in informal networks, then the information regarding an innovation is spread quicker, and provided the information for the innovation is positive, can lead to a positive attitude towards adoption. Such networks may include organizations within an industry or from different industries [18]. Apart from social influences, the business environment affect the adoption of innovations in different ways. A potential adopter may gain an internal benefit from the fact that business partners within his network have adopted the innovation in the past. Furthermore, pressures due to competition can motivate organizations to adopt an innovation [19].
3. Method

We conducted semi-structured interviews with owners of 10 construction SMEs from the Swedish counties Kronoberg and Västra Götaland. Information was also retrieved from the company web pages regarding their structure, products and services they offer, and any potential innovative initiatives they have undertaken. Interviews were conducted in person at the interviewees’ workplace. On an average each interview lasted 95 minutes and begun with questions related to the demographics of the interviewee, nature of the business, and other general information about the company. The interview continued with a discussion on the reasons for adopting a new business model, their thoughts regarding one-stop-shop concept and its adoption. Questions were divided into thematic groups in accordance with what literature describes about adoption of innovations. Every question was posed in a way that gave space for a spontaneous and open discussion, and additional comments were encouraged in order to gain a deeper understanding on the answers of interviewees. Interviewees did not allow the conversations to be recorded electronically, so they were captured through handwritten notes by the interviewer and written comments from the interviewees. Those notes were examined thoroughly by the authors.

4. Results

Table 1 offers some general information regarding the companies interviewed. Those companies have been established for an average of 13 years, ranging from a start-up operating for 3 years to a mature business in operation for 43 years. The average number of people employed was 11.2, which classifies the sample as small companies. The companies operate on a regional level and offer a variety of technical services.

When discussing business culture and innovation, one could identify differences in the management style of the examined companies and differences on their perception for future growth. Their answers confirm that the age of company affects their willingness to innovate, and that younger companies have a more open-minded approach towards new ideas and they showed great initiative to grow their business and enter new markets.

Table 1: Construction SMEs interviewed in this study

<table>
<thead>
<tr>
<th>Company</th>
<th>Owner’s age group (years)</th>
<th>Number of employees</th>
<th>Age of company</th>
<th>Nature of business</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>40-50</td>
<td>2</td>
<td>9</td>
<td>Roof and floor constructions and renovations</td>
</tr>
<tr>
<td>2</td>
<td>40-50</td>
<td>8</td>
<td>10</td>
<td>Ventilation systems</td>
</tr>
<tr>
<td>3</td>
<td>60+</td>
<td>23</td>
<td>43</td>
<td>Heating systems</td>
</tr>
<tr>
<td>4</td>
<td>50-60</td>
<td>15</td>
<td>5</td>
<td>Solar panels</td>
</tr>
</tbody>
</table>
A vast majority of companies suggested that a change in their organizational structure due to innovation would be "bad for business". They felt unsure if they would successfully deliver their services if changes were made in the way they deliver their services, even though they understand that this could help them to grow financially. They also feared that a change in the way they deliver their services would make them lose control and cause inefficiencies in financial and time planning. Interviewees see themselves as modern entrepreneurs and believe that they can achieve growth without organizational changes. Two companies opined that taking risks and changing structure is the driving force for growth. They pointed out though that before taking such risks a careful investigation of a variety of parameters is required.

In the discussion about adopting a new business model, most companies claimed that their size does not leave space for great complexities. They stressed that adoption of a new business model may disturb the balance they have managed to achieve in their business and may disappoint their employees whose satisfaction is the key of company’s success. For those companies investing in changing their business model is valued way less than investing in creating motives and train their personnel.

All interviewees agreed that they were aware of the risks deriving from adopting a new way of doing business. One of the risks stated is the obvious lack of competences required to adopt a more complex business model. As one of the interviewees stated "I feel safe in coordinating my employees and do the math for my projects, but beyond the limits of my business I feel that my managerial skills will not be sufficient." Additionally, they claimed that they will have to deal with more complex customer and collaborator relationships, and they feel uncertain if they could handle that pressure effectively. Furthermore, on an operational level they feel certain that they can guarantee quality of their work if they follow their existing way of service delivery. Potential changes on an organizational level is seen as a source of changes and potential failures on the operational level. In connection with that, they feel that potential financial damage because of the above-mentioned reasons will put business at stake.

To a certain extent, all interviewed companies work with networks to deliver collaborative projects and exchange knowledge. They claimed that their networks allow them to reach new customers, while at the same time they gain new competence from collaborative acts. For some of them though, it is hard to share their knowledge and expertise as they see their way of delivering services "rather specialized and unique in each project they deliver". They have all accepted though that knowledge sharing is of crucial importance as it can lead to a significant upgrade of the whole industry and therefore bring great benefits to them.

2.1 Perception regarding one-stop-shop business model for renovation

Interviewees were asked to comment on one-stop-shop business model. Their responses were largely similar. The majority showed a keen interest for one-stop-shop. They claimed that it provides open space for collaborations with professionals from other fields of business. It was marked that through this collaboration there is a great opportunity to strengthen their position in the market and expand their networks. They firmly believed that they could learn a lot from their collaborators and improve the way they do business. Furthermore, learning from experts from different business segments provides them with an opportunity to adopt a more extrovert business approach and possibly reach a new customer base. Commenting on the proposed model (Figure 3), they have pointed out that an entrepreneur could take the role of the project manager in such a renovation project and coordinate the other involved actors. Additionally, they insisted that house owners should take care of financing scheme, as it would make actors more willing to be involved in such a project.
When interviewees were asked to comment how they see themselves as the provider of that service they have expressed some concerns which for them are deterrent factors. They have all agreed that it is somewhat difficult for them to ensure quality of work except their field of expertise. For them, different working cultures would bring problems in coordination, and therefore claimed that they do not want to bother themselves with bridging working culture gaps. Another important concern stated is the potential conflict of interest between involved parties. They argued that with regard to the technical experts who would perform the renovation work there should be disagreements about the priority that should be given to each required technical work and the need or not to perform some of them. Moreover, they felt uncertain that their current business culture and lack of strong management competence would allow them to deliver quality service to the customers as expected of a one-stop-shop concept. In connection to that, they stated that contracts for such a project should be extremely detailed, clarifying exactly liabilities and risk mitigation.

Based on the above they proposed the one-stop-shop model for house renovation to be as it is illustrated in Figure 2.

In this model, house owners secure financing for the renovation project. Then they sign a contract with the entrepreneur/project manager who takes the responsibility to coordinate the different actors in the renovation process and deliver to the house owner an energy efficiently renovated house.

![Fig. 2. One-stop-shop model as proposed by construction SMEs](image)

5. Conclusions and discussion

Extant literature suggests that small companies are more positively inclined towards innovation adoption decisions, but they do not reach the appropriate level of preparedness to implement innovations. The findings of this study support to a great extent this view. Small companies are indeed not prepared to implement an innovative concept like one-stop-shop is, and at the same time are they show a negative inclination towards deciding to innovate in general. The examined companies claim to have an entrepreneurial approach and someone would expect this attitude to boost their willingness to innovate, but the findings of this study show the exact opposite. Experienced companies rely on expanding their operations within their area of expertise and avoid to adopt further innovations. Younger companies are reluctant to adopt innovations that the changes accompanying adoption will actually harm their business. Those companies claim their willingness to enter new markets, but the structural changes that are required to perform to succeed their goals, instead of positively influence them to adopt
innovations, they make them more reluctant and increase their beliefs that such a change is a high risk move that will not benefit their business.

Overall, the one-stop-shop renovation concept received positive feedback from the interviewed companies. They have the networks with other companies and the appropriate business posture to initiate such a model. Their difficulty though is to share knowledge with presumptive partners, considering their part of work as too specialized and unique to be understood. In addition, they lack managerial skills to coordinate the other actors efficiently, which discourages them to adopt the one-stop-shop concept, which is a new and untested model in the Swedish context. However, the examined companies proposed a new type of dedicated entrepreneur to take charge of the whole coordination envisaged in the one-stop-shop concept. This actor is seen to have the necessary managerial capabilities, being able to arrange the details and design the renovation project, avoid the conflicts of interest between the parties involved, and mitigate the risks in the implementation of such a project. The presence of such a person will allow companies to understand how the concept works, and potentially influence them positively to be the initiators in future projects. A successful one-stop-shop implementation on a trial basis would have a positive effect in the market, and in the future it can act as a great motive for individuals as well as companies which will decide to enter this business area. Therefore, the role of that entrepreneur should be further studied since it can lead to the creation of a new professional sector, which will benefit from the promising market of detached house energy renovations.

Acknowledgements

The authors gratefully acknowledge the financial support from the Kamprad Family Foundation for Entrepreneurship, Research & Charity, Smarthousing Småland and Horizon 2020. They would also like to thank the interviewees for offering their precious time and for the interesting and lively discussions.

References


