Innovation capacity in traditional food SMEs in Croatia

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Abstract
The objective of this study was to determine innovation capacity of Croatian traditional food small and medium sized enterprises (SMEs) in the period from 2010 – 2012. We examined in which innovation activities traditional food SMEs mostly invested in this period and how they perceived the contribution of introduced innovations to their business growth. The survey included 65 producers of traditional agri-food products (TAFP). Results showed that high proportion of SMEs have invested in some innovation activity in 2012. Most of them made investments due to some necessity, mainly in product and/or process development. Producers of TAFP have mostly invested in product innovations while smaller proportion of SMEs invested in market and organizational innovations. As perceived, the highest contribution to business growth had investments in products innovations (improvement of quality, packaging and convenience of TAFP). Profitable SMEs and those with higher annual income believed that investments in products innovations (packaging) and market innovations (new markets and improvement of marketing) significantly contributed to their business growth compared to unprofitable and SMEs with lower income (p<0.05). The results indicate that Croatian traditional food SMEs are aware of the importance of innovation, however, insufficient available budget are one of the major constraint on their greater use.

Key words: innovation capacity, small and medium enterprises, traditional agri-food products

Inovacijski kapaciteti malih i srednjih poduzeća tradicijskih poljoprivredno – prehrambenih proizvoda u Hrvatskoj

Sažetak
Cilj ovog istraživanja bio je utvrditi inovacijske kapacitete hrvatskih malih i srednjih poduzeća (MSP) tradicijskih poljoprivredno - prehrambenih proizvoda (TPPP) u razdoblju od 2010. - 2012. godine. Ispitali smo u koje inovacijske aktivnosti su proizvođači TPPP najviše ulagali u navedenom razdoblju te kako percipiraju doprinos uvedenih inovacija poslovnom uspjehu njihovih poduzeća. Anketno ispitivanje je provedeno s 65 proizvođača TPPP. Rezultati su pokazali da je visok udio MSP ulagao u neke inovacijske aktivnosti u 2012. godini. Među onima koji su ulagali najviše je udio onih koji su ulagali prema potrebama, uglavnom u razvoj novog proizvoda i/ili proizvodnog procesa. Proizvođači TPPP su najviše ulagali u inovacije proizvoda, dok je manji udio MSP ulagao u marketinške i organizacijske inovacije. Kao što je uočeno, najveći doprinos poslovnom uspjehu MSP imalo je ulaganje u proizvodne inovacije (poboljšanje kvalitete, pakiranja i praktičnosti TPPP). Profitabilna MSP i ona s višim godišnjim prihodima smatraju da je ulaganje u inovacije proizvoda (poboljšanje i marketinške inovacije (novi tržišta i poboljšanje marketinških aktivnosti) značajno doprinijelo njihovom poslovnom uspjehu u odnosu na neprofitabilna i MSP s nižim prihodima (p<0.05). Rezultati istraživanja ukazuju da su hrvatska MSP tradicijskih poljoprivredno - prehrambenih proizvoda svjesna

važnosti inovacija, međutim, raspoloživi budžet je jedno od glavnih ograničenja njihove veće primjene.

Ključne riječi: inovacijski kapaciteti, mala i srednja poduzeća, tradicijski poljoprivredno – prehrambeni proizvodi

Introduction

In globalized food market, innovation is a key strategic tool for micro, small and medium sized enterprises (SMEs) to achieve competitive advantage on the market (Kuhne et al., 2010, Avermaete et al., 2004). According to Brewin et al., (2009) innovations are understood as: new products, new processes, new markets, and new organisational methods. Innovations in traditional food are mainly related to product innovations, such as packaging innovations and changes in product composition, product size and form of using the product (Gellynck & Kühne, 2008). The main motivation behind innovation for producers may be increasing production efficiency, evolving their product range, building up a reputation as an innovative enterprise - which has a beneficial effect on their image (Henard & Dacin, 2010). Introducing innovations in traditional food products may increase success of producers of traditional agri-food products (TAFP) in the market, since some of the current technologies that are used in the production of these products still rely on traditional process practices with low competitiveness and low efficiency (Fito & Toldrá, 2006). Therefore, innovation activities in literature stand out as a factor that leads to enterprises’ progress (Božić & Radas, 2005). So far, only few published studies focus particularly on innovations in traditional agri - food products sector (Jordana, 2000, Kuhne et al., 2010) while in Croatia until today was not conducted any research on this topic even though the secor faced significant growth in the last 20 years regarding quality as well as diversity of supply.

Therefore, the objectives of this study were to:

1. Determine innovation capacity of Croatian traditional food SMEs in the period from 2010 – 2012
2. Examine in which innovation activities traditional food SMEs mostly invested in this period
3. Determine how traditional food SMEs perceive the contribution of introduced innovations to their business growth.

Materials and Methods

In the first step of the research we contacted 310 producers of TAFP by telephone in order to ask them to participate in the survey. Further, 155 of them agreed to participate in the survey received a questionnaire by e-mail. The final study included 65 producers who have sent us completed questionnaire. The response rate was 42%. The survey was conducted from February to June 2013. All interviewees were questioned about the innovation capacity of their company in the period from 2010 – 2012. Innovation capacity was measured by exploring financial innovation efforts, innovation activities and innovation results (Table 1, 2). Items used for measuring innovation capacity were selected from the studies carried out by Kuhne et al. (2010). In order to determine financial innovation efforts the respondents were asked how structured they spent their financial resources for any of four offered innovation types, with the following answers: ‘did not spend financial resources at all’ (1), ‘did spend according to the necessity, but without being budgeted’ (2), ‘did have a distinct budget on project base’ (3), or ‘did have a distinct budget on yearly base’ (4). Further, in relation to their innovation activities the respondents were asked whether or not they introduced any changes during the period 2010- 2012 related to product, market, or organizational innovation. Identical innovation types were used to assess the innovation results. The respondents were asked to indicate on a 5-point Likert scale from from (1) – totally disagree to (5) – totally agree their agreement with the statement that the application of the respective innovation activity had a significant contribution to the business growth of their company. The usual socio-demographics were collected – age, sex, education and for the economic description, the following variables were included: business growth and profitability in the last three years, income and type of enterprises. Collected data were entered and analyzed using statistical program SPSS. Univariate analysis (frequencies, data distribution) and analysis of variance (ANOVA) were conducted.
Results and discussion

Among the respondents, the majority were men (78.5%). The age range of respondents was between 23 and 70 years and the average age was 46 years. As many as 60% of respondents have attended college, followed by those with a secondary education (32.3%), while 7.7% of them have completed a master’s degree or doctoral degree. The study included 92.3% of small and 7.7% of medium enterprises. Mainly the key persons in these enterprises (managers and owners of SME) have participated in the research. A high proportion of SMEs (85%) stated that their enterprises had been profitable over the last three years and 74% of SME have achieved business growth in this period. The study included 43.8% of SMEs with annual business income below 500,000 thousand HRK\(^1\) and 30% have income between 500,000 and 1 million HRK. More than a third of SMEs (35%) in 2012 had achieved income higher than 1 million HRK. The structure of the sample shows that mostly successful and perspective producers of TAFP participated in the study, even though such structure is not representative for the Croatian TFP sector.

Table 1 Financial efforts of Croatian traditional food SMEs in 2012

<table>
<thead>
<tr>
<th>In 2012 did your company spend any financial resources on the following activities?</th>
<th>None</th>
<th>Spent according to necessity without being budgeted</th>
<th>Distinctively budgeted on a project base</th>
<th>Distinctively budgeted on a yearly base</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Product development</td>
<td>35.9</td>
<td>45.3</td>
<td>9.4</td>
<td>9.4</td>
</tr>
<tr>
<td>Process development</td>
<td>25.0</td>
<td>54.7</td>
<td>10.9</td>
<td>9.4</td>
</tr>
<tr>
<td>Market research</td>
<td>43.8</td>
<td>43.8</td>
<td>6.3</td>
<td>6.3</td>
</tr>
<tr>
<td>Organisational development</td>
<td>44.4</td>
<td>46.0</td>
<td>3.2</td>
<td>6.3</td>
</tr>
</tbody>
</table>

Analysis of the innovation capacity of Croatian traditional food SMEs showed that high proportion (83%) of SMEs have invested in some innovation activity, while only 17% of SMEs didn’t invest in any innovation in 2012. The highest share of SMEs made investments due to some necessity, and relatively small share of SMEs budgeted their investments either on a project base or on a yearly base. Very few SMEs have invested in market research and organizational development (Table 1).

Table 2 Innovation activities and innovations results of SMEs from 2010 – 2012

<table>
<thead>
<tr>
<th>Type of innovation activities</th>
<th>Innovation capacity</th>
<th>Innovation activities**</th>
<th>Innovation results***</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>%</td>
<td>Yes</td>
</tr>
<tr>
<td>Product innovations</td>
<td>Improving the quality of our traditional product</td>
<td>87.69</td>
<td>12.31</td>
</tr>
<tr>
<td></td>
<td>Improving the packaging of our traditional product</td>
<td>84.62</td>
<td>15.38</td>
</tr>
<tr>
<td></td>
<td>Improving the convenience of our traditional product</td>
<td>64.62</td>
<td>35.38</td>
</tr>
<tr>
<td>Market innovations</td>
<td>Improving marketing activities for our traditional product</td>
<td>72.31</td>
<td>27.69</td>
</tr>
<tr>
<td></td>
<td>Entering new geographical markets for our traditional product</td>
<td>61.54</td>
<td>38.46</td>
</tr>
<tr>
<td>Organizational innovation</td>
<td>Improving management practices for research and development</td>
<td>50.77</td>
<td>49.23</td>
</tr>
</tbody>
</table>

** yes–no applicable for introduction of innovation activities, only for SMES
*** Contribution of applied innovation activity to business growth, 1) – totally disagree to (5) – totally agree

Producers of TAFP have mostly invested in product innovations whereby many of them improved quality (88%) and packaging (85%) of their products. Smaller proportion of SMEs invested in market and organizational innovations (Table 2). According to the perception of producers of TAFP, the highest contribution to business growth of SMEs has product innovation respectively improvement of quality (mean =4.03), packaging (3.80) and convenience (mean=3.38) of TAFP. Lower contribution to business growth have investments in the market and organizational innovations (mean=3.60 for both).

Producers who were profitable in the last three years believe that investment in improving packaging of traditional products, entering a new geographical markets and improving marketing activities significantly contributed to business growth of their companies compared to unprofitable enterprises (p<0.05). Also, producers with higher income perceived that entering a new geographical areas has significantly contributed to their business growth in comparison with producers with lower income (p<0.05). Sociodemographics (sex, age, education) and economic variables (business growth and type of enterprises) do not affect the perception of the producers about contribution of innovation activity to business growth of their SMEs (p >0.05).

Conclusion
Analysis of the innovation capacity of Croatian traditional food SMEs showed that high proportion (83%) of SMEs have invested in some innovation activity, while only 17% of SMEs didn’t invest in any innovation in 2012. Among those who have invested, the highest share belongs to SMEs who made investments due to some necessity without being budgeted. Investments were mainly done in product innovations and less in market and organizational innovations. According to their perception, the highest contribution to business growth of SMEs had innovations leading to improvement of quality, packaging and convenience of TAFP (products innovations). Profitable SMEs and those with higher annual income perceived that investments in products innovations (packaging) and market innovations (entries into new markets and improvement of marketing) significantly contributed to their business growth compared to unprofitable and SMEs with lower income.
The results indicate that Croatian traditional food SMEs are aware of the importance of innovation, however, insufficient available budget are a major constraint on their greater use. The structure of the sample shows that mostly successful and perspective producers of TAFP participated in the study; therefore we can assume that there is also a large number of SMEs who are not aware of the innovation. For these SMEs it is recommended to increase education activities about impact of innovation on the business growth and to introduce information campaigns about marketing innovations in agri-food sector. Development of innovations in SMEs ensures business success and growth as a result of which, over time, being transformed into more competitive enterprises.

**Remark**

Data used in this study were collected for the purpose of Željka Mesić’s doctoral thesis: “Supply chain performance of traditional agri-food products – chain members perception”, University of Zagreb Faculty of Agriculture, Zagreb, Croatia. Defended on 15 May 2014 under mentorship of prof. Marija Cerjak.

**Literature**


