

CONSUMERS KNOWLEDGE AND ATTITUDE TO TRADITIONAL AND ENVIRONMENTALLY FRIENDLY FOOD PACKAGING MATERIALS IN MARKET OF LATVIA

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Abstract

The packaging industry is one of the most important industries in the world. The quantity of packaging materials increases annually. Food packaging accounts for almost two-thirds of total packaging waste by volume and approximately 50% by weight of total packaging sales. The aim of food packaging is to contain the food, to protect food products from external influences and damage, to preserve food safety and minimize the environmental impact. To clear up a situation in the market of Latvia, as well as to study the consumer's awareness problem and attitude to traditional and biodegradable polymer packaging materials and their implementation in the market year of 2010, questionnaire was polled. 1200 respondents (50% female and 50% male) from different regions of Latvia (Kurzeme, Zemgale, Vidzeme, Latgale and Riga) were in reply to 19 different questions: how well-informed they are for traditional and eco-friendly packaging and how much more they are willing to pay for eco-friendly food packaging (biobased, biodegradable, recyclable) compared with conventional polymers. Most of consumers inquired in Latvia think that there is too much polymer packaging for food products on the market.

Key words: food packaging, biodegradable, consumers, market.

Introduction

Packaging plays a major role when products are purchased. After all, it is the first thing seen before making purchase choices and it is widely regarded that over 50 per cent of purchasing decisions are made at the shelf, or point of purchase. Therefore, packaging which creates differentiation and identity in the relatively homogenous consumer packaged goods industry is therefore highly important. Today, it is widely acknowledged that packaging decisions can have a significant impact on sales. Therefore, without some evidence of consumer acceptance towards different packaging concepts and designs, manufacturers and retailers will restrict their chances of profitable innovation (Aarnio, Hamalainen, 2008; Marsh, Bugusu, 2007).

The quantity of packaging materials increases by 8% every year; in proportion, the amount of waste increases as well, at the same time fossil resource – petroleum is decreasing. In recent years, there has been marked an increased interest in biodegradable materials for application in food packaging, agriculture and other areas. In particular, biodegradable polymer materials (known as biocomposites) are of high interest. Polymers materials, and are continually being employed in an expanding range of areas. As a result, many researchers are investing time into modifying traditional materials to make them more user-friendly, and into designing novel polymer composites out of naturally occurring materials. A number of biological materials may be incorporated into biodegradable polymer materials, with the most common being starch and fiber extracted from various types of plants. The belief is that biodegradable polymer materials' production at a low cost will reduce the need for synthetic polymers (thus reducing environment pollution), thereby generating a positive affect both environmentally and economically (Kolek, 2001; Kolybaba at al., 2003; Robinson, 2010).

This paper presents the enquiry results of Latvian consumers' attitude to packaging and the importance of the environmental and functional characteristics of packaging for their purchasing decisions. The aim of this study is to evaluate whether and how purchasing behaviour can be influenced in such a way as to limit the environmental problems caused by

packaging. The study deals with consumers' attitude to packaging in general, and mainly in details of biodegradable packaging.

Materials and Methods

To clarify the situation in the market of Latvia, as well as to study the consumer's awareness problem and attitude to traditional and biodegradable polymer packaging materials and their implementation in the market year of 2010, questionnaire was polled. 1200 respondents (50% female and 50% male) from different regions of Latvia (Kurzeme, Zemgale, Vidzeme, Latgale and Riga) were enquired, from which 33% were younger than 20 years, 34% were 20–45 years old, and 33% – older than 45 years. Respondents were asked to answer on 19 different questions: how well-informed they are for traditional and eco-friendly packaging and how much more they are willing to pay for eco-friendly food packaging (biobased, biodegradable, recyclable) compared with conventional polymers. The statistics on a completely randomized design was determined using the *General Linear Model (GLM)* procedure SPSS 10.0 (Arhipova, Bāliņa, 2003). The *one-way ANOVA* ($p \leq 0.05$) test was used to determine the significance of differences between the means.

Results and Discussion

The obtained results are demonstrated in Figures 1 to 10. The first column in each figure shows a summarized attitude of respondents all over Latvia, and the next columns present respondents' answers from 4 regions of Latvia – Kurzeme, Latgale, Vidzeme, and Zemgale and at the end the fifth column – of capital city Riga.

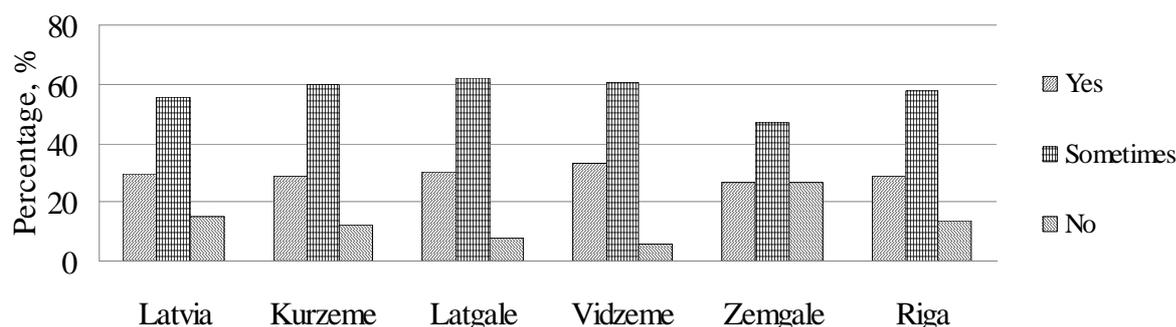


Figure 1. Do you as a consumer consider that there is too much packaging on foods you buy?

Most of consumers (approximately 56%) inquired in Latvia, with the exception of Zemgale (47%), showed a very similar tendency ($p > 0.05$), considering that sometimes there is too much polymer packaging on food products (Fig. 1.).

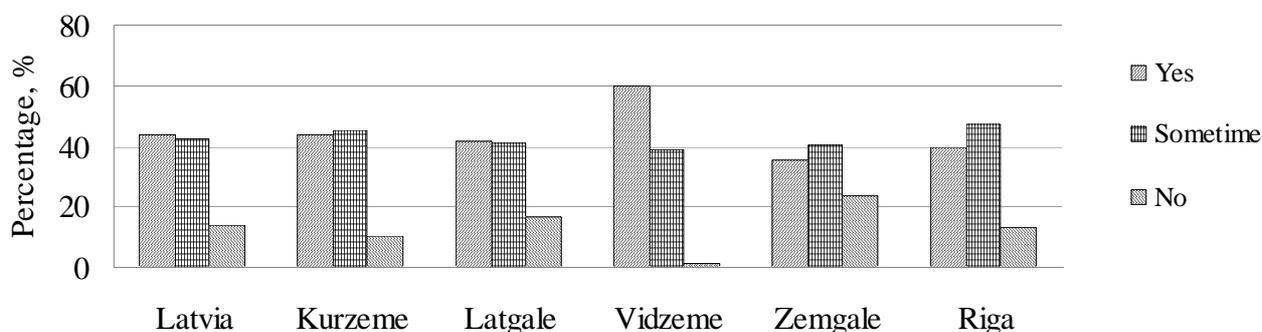


Figure 2. Do you as a consumer worry about the amount of packaging waste you get when buying foods?

On average, 44% of consumers inquired in Latvia (Fig. 2.) worry about the amount of packaging waste when buying foods and beverages; only for small part (14%) of consumers this question was indifferent ($p>0.05$). The consumers' opinion regarding too large used packaging amount in all regions of Latvia except Vidzeme (60%) showed a similar tendency ($p>0.05$).

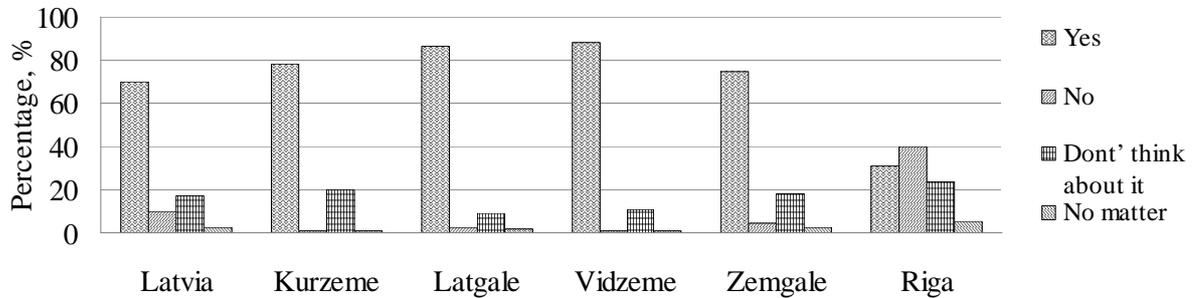


Figure 3. Are you informed as a consumer about the packaging material different influence on the environment?

A heartening news have been obtained from respondents all over Latvia (70%) and in most individual regions as well (75–88%), that consumers, besides Riga (only 31%), are quite well informed about packaging materials' different impact on pollution of environment ($p>0.05$) (Fig. 3.). In Riga as capital city the waist system is totally co-ordinated, therefore consumers in weekdays don't have to see scrap-heaps, plastic bottles on the banks of a ditches, and flying plastic bags on the top of trees, therefore they don't worry (40%) or even don't think at all (22%) about environmental pollution with plastic waste from packaging.

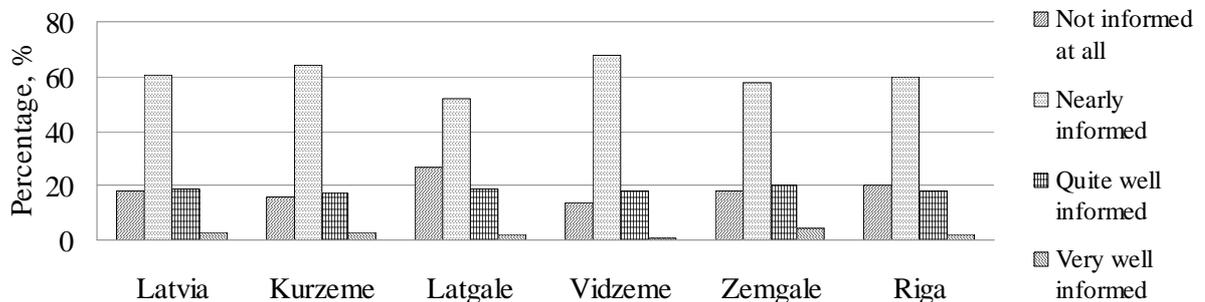


Figure 4. How well are you informed about eco-friendly, biodegradable packaging?

Figure 4 shows that 61% of respondents in Latvia (in Latgale 52%) are nearly informed about the existence of ecofriendly biodegradable packaging. The situation in all regions of Latvia except Latgale (where 27% were not at all informed) ($p>0.05$) shows a similar tendency of knowledge's on biopolymers ($p>0.05$).

Results presented in the Figure 5 inform that most of respondents all around Latvia as more environmentally friendly packaging preferred degradable polymers (valuating by 1 to 2 points) and paper (1 to 2.5 points), following by reusable glass packaging (3 to 5 points) and Tetra Pack laminated milk and juice carton (4 points, excepting Latgale). Metal cans and traditional polymers (validated by approximately 6 points) were considered as the worst. Obviously, Latvian consumers are not at all informed that metal packaging is the most widely recycled waste therefore can be considered as environmentally friendly packaging.

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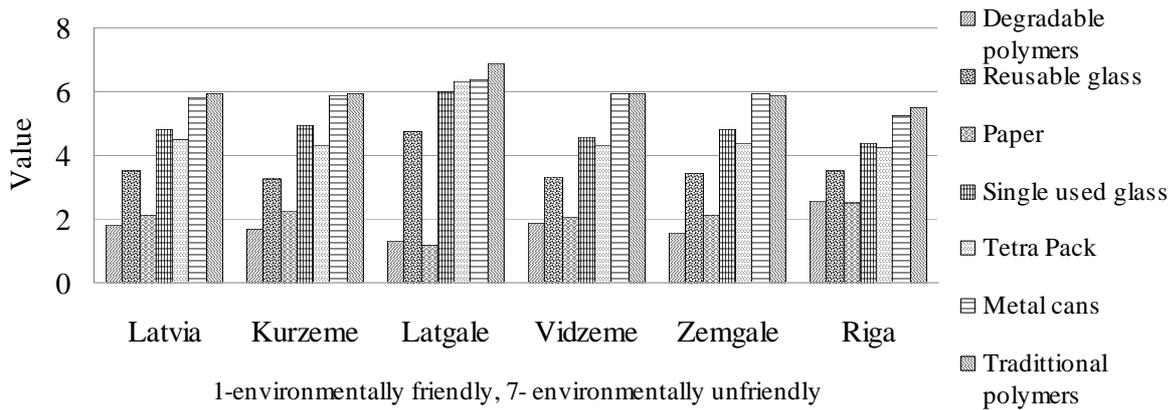


Figure 5. Which of the mentioned packaging materials do you prefer as more environmentally friendly?

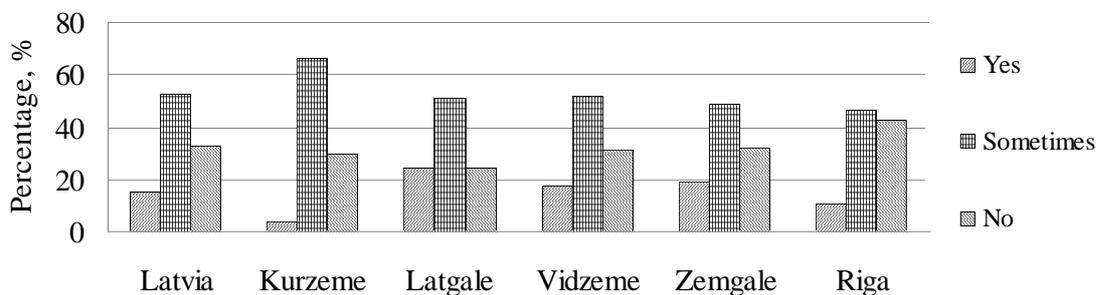


Figure 6. Do you as a consumer use your own containers when purchasing unpacked foods?

Approximately 52% of respondents in Latvia sometimes use their own containers when purchasing any unpacked foods on the market. Only about 15% of Latvian respondents confirmed that it is normally always to use their own special containers for foods' shopping. The consumers' practice about frequency of own packaging container application in all regions of Latvia shows a similar tendency ($p > 0.05$).

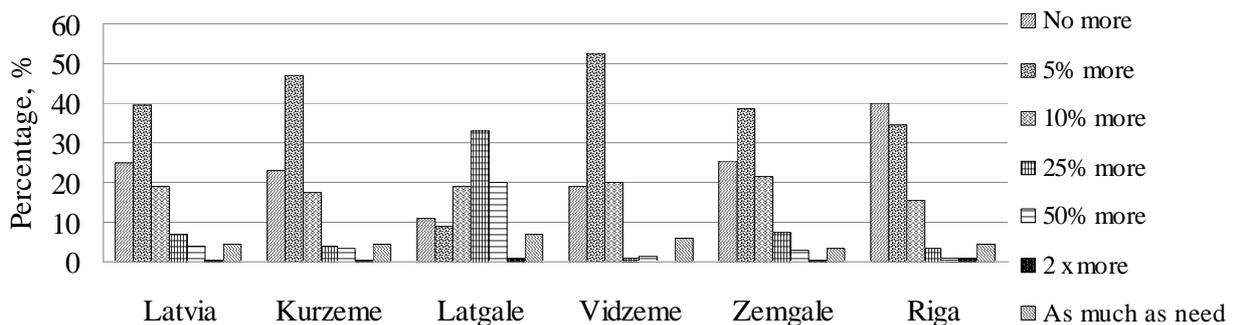


Figure 7. How much more are you willing to pay for eco-friendly packaged (biodegradable) products compared with traditionally packed ones?

The information summarized in Figure 7 shows that the majority of respondents come up with the following answers: they are willing to pay not more or only 5% or some of them – 10% more compared to conventional packaging. On average, in Latvia 25% of consumers are unwilling at all to pay more, exclusively 39% agree to pay 5% more and 9% agree pay 10% more for eco-friendly (biodegradable) package compared with traditional package. It is interesting fact in the enquiry that average 1% of respondents could agree to pay twice as

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much for environmentally friendly packaging. The respondents' point of view from region Latgale and capital of Latvia – Riga is substantially different ($p > 0.05$) compared with the average consumers' view in Latvia.

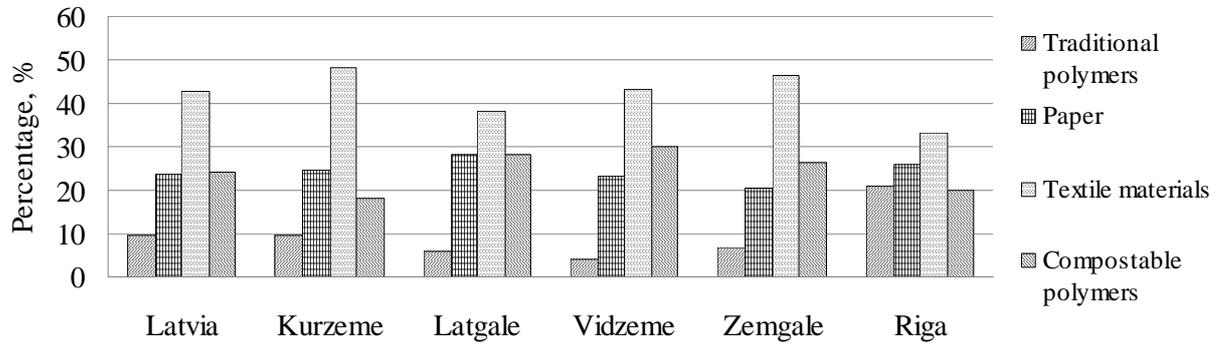


Figure 8. What kind of material do you prefer for shopping bags?

Figure 8 show that Latvian consumers mainly prefer textile material shopping bags. Analysing the situation in all territory of Latvia, we can see that consumers choose paper and compostable material shopping bags more or less similar. Nevertheless, still 10% of respondents prefer traditionally used polymer shopping bags. Exclusively in Riga the consumer's choose of shopping bags seems more or less in the same kind.

Most of respondents support the idea to use new eco-friendly materials for food packaging. Positive evaluations were given by 82% of respondents in Latvia (Fig. 9).

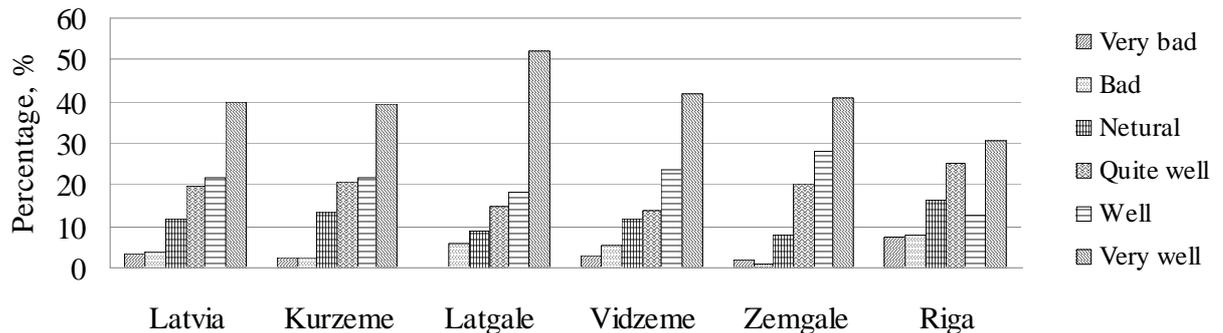


Figure 9. How do you evaluate the proposal to introduce new eco-friendly materials for food packaging?

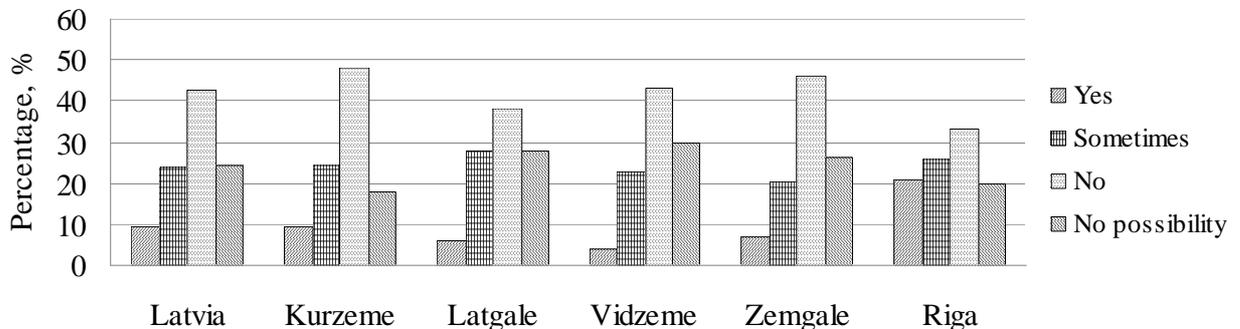


Figure 10. Do you prefer the separate waste collection?

In general the respondents (21%) participating in separate waste collection are inhabitants of Riga (Fig. 10), even if the attitude of capital city Riga population disparate ($p > 0.05$) compared

with the average view at all in Latvia (10%), respectively, in all another regions (4–10%) ($p>0.05$). A large part of consumers (38–48%) does not separately collect the waste or declare that there is no possibility for it.

Conclusions

Most of consumers in Latvia consider too much polymer packaging applied for food products. 82% of respondents in Latvia support the idea of new eco-friendly food packaging implementation, nevertheless only small part of consumers agree to pay more for environment protection from used packaging. To optimize the environment protection effects of food packaging, it is essential to educate consumers and to analyse the system that covers its main purpose “food”, the total production chain and the varying demands of the consumer.

Acknowledgment

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