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Implementation of EU Waste Recycling Regulation in Macedonia

The Challenges of Policy Integration and Normative change

by JANNIKA SJOSTRAND ILIEVSKA KREMER

ABSTRACT

The objective of this research is to examine changes made to harmonize the Macedonian waste and recycling regulatory framework with the European regulatory framework and from a behavioral and a policy perspective examine how the General Public in Skopje, Macedonia, perceives these regulatory changes on the ground. Specifically, it is an attempt to uncover behavioral and structural barriers and opportunities that might occur when implementing the Law on Packaging and Packaging Waste and the Law on Batteries and Accumulators, which have been transposed from European into Macedonian law as a part of the harmonization process. In order to get to these questions I carried out a comparative survey to study environmental behaviors and norms (and the factors affecting it) of Macedonian professionals working with waste and/or recycling as well as with the general public living in Skopje, Macedonia. The outcome of the survey, accompanying interviews, and literary review suggest among others things that people are supportive of recycling measures but that there are normative barriers that influence why the general public recycle or not. There also appears to be a lack of communication and collaboration between official stakeholders, which has resulted in confusion over who should implement and how to implement recycling reforms. Moreover, there is little done to address unintentional competition between informal and formal collectors of waste or to include the informal sector in the official decision making process.

Key words: recycling; waste, EU, Macedonia, waste management; norms and behavior; harmonization; plastic bottles; batteries; informal sector, Triandi's theory of interpersonal behavior.

BACKGROUND

Introduction

The main driving force for environmental reform in the Republic of Macedonia is accession to the European Union (EU). EU accession is conditional, and in order to become a member Macedonia has to harmonize its laws with the European *acquis*, this also includes its waste management laws. Alongside water management the Macedonian government and the Ministry of the Environment and

Physical Planning (MoEPP) considers waste management as one of its top two environmental priorities (UNEC, 2011).

Many Macedonians consider EU accession a natural step in the development of their relatively young country. Macedonia was part of the former Yugoslav Republic and gained its independence peacefully in 1991 (*ibid*). The country is landlocked and sits on the south end of Balkan in Eastern Europe bordering Greece, Bulgaria, Kosovo, Albania, and Serbia. Out of these countries Greece and Bulgaria are already EU members, Serbia a candidate for

membership, and Albania and Kosovo considered potential candidates.

Macedonia has a population of approximately 2.08 million with the majority living in the capital Skopje (CIA.gov). The total amount of waste generated by Macedonians can be estimated at approximately 26-million t/y with municipal and construction waste accounting for 500,000 t/y of that (NVMP, 2008). Even though the country produces relatively little waste in comparison to other European countries there are major discrepancies in how the waste is managed. Increasing pressures on the waste management system, in combination with aspirations for EU membership, has resulted in major efforts to upgrade the existing system. This is done in part by harmonizing the Macedonian waste and recycling regulatory framework with that of the European Union.

The objective of this research is to examine this process of harmonization from the level of official government to the level households with a specific focus on the recycling of PET plastic bottles and household batteries. PET stands for polyethylene terephthalate and is the type of recyclable plastic commonly used to package soft drinks. Household battery is a collective name for alkaline, rechargeable and button batteries. These cannot be disposed of in landfills because they contain acids and toxic metals such as mercury, lead, cadmium and nickel. I chose these two waste streams for three reasons:

1. The two waste products have very different material qualities (hazardous vs. non-hazardous).
2. There already exists some recycling infrastructure for both waste products
3. Laws managing PET plastic bottles and batteries were recently adopted into Macedonian law.

By examining the waste stream of PET

plastic bottles (from here on plastic bottles) and household batteries (from here on batteries) I was able to recognize behavioral and practical barriers that officials in Macedonia encounter in the process of harmonizing the Macedonian waste management and recycling system to the standards set out in the European acquis. The plastic bottle and battery waste streams can be better understood by looking at the legal framework that governs them, the influential stakeholders that have shaped them, and the behavioral theory that underlies my questioning about the people that contribute to them.

Legal Framework

The process of accession started with the signing of the Agreement of Stabilization and Association in 2002, and in 2005 the country achieved candidate status (EEA, 2011 Survey, 2011). MoEPP is the responsible body within the Macedonian government for planning and enforcing environmental regulation. The Macedonian Law on Waste Management is the legal act that stipulates the overall rules and it establishes the legal basis for adoption of secondary legislation for waste management such as the Waste Management Strategy (“WMS”) of 2008-2020, and the National Waste Management Plan (“NWMP”) 2009-2015 (EEA, 2011). Whereas, the WMS defines the directions and principles of waste management in Macedonia, the NWMP lays out the technical work and timeline needed to harmonize with the standards of the European Union (EEA, 2011, MOEPP, 2008). The purpose of the plan is to provide an “adequate environmental policy, decision making framework, economic basis, public participation and gradual setting up of technical infrastructure” to carry out waste management in compliance with EU

legislation and the EU Sixth Environmental Action Program (2002-2012) (NWMP, 2008).

Recycling of plastic bottles is regulated through the Law on Packaging and Packaging Waste Management, which transposes EC Directive 94/62 on Packaging and Packaging Waste (Ivanova, 2011). Batteries are regulated through the Law on Management of Waste Batteries and Accumulators, and it transposes EC Directive 2006/66 on Batteries and Accumulators and Waste Batteries and Accumulators (ibid). Both laws are based on the principle of responsibility of producer and the principle of assessing the life cycle of the product. According to the producer responsibility principle the manufacturer is responsible for taking measures for the management of their goods including the creation of conditions for achieving a high degree of collection from the end user and their processing (OGRM, No. 161/2009 and 140/2010). The Principle of Assessing the Life Cycle of the Product states that the producer is obliged to carry out the assessment of the products lifecycle, the reduction of waste at the end of the products lifecycle, and the prevention of the negative influences on the media and areas in the environment (ibid).

In practice these two principles mean that the producer (or in many cases the importer) of plastic bottles and batteries can choose to arrange collection and recycling of the final waste from end-users themselves or pay a licensed third party legal entity to do so. In May 2012 there was one existing such entity called Pakomak and two more in the process of applying for a license. The producer is however responsible for keeping records of the type and quantity of waste released on the market and with the legal entity make arrangements for the collection, recycling, and disposal of their products.

Macedonian waste management laws

are harmonized with European law in theory, but not in practice. Producers of plastic bottles had until January 2011 to register their business with MoEPP and producers of batteries had until December 31st 2011 (OGRM, No. 161/2009 and 140/2010). However, neither sector was obligated to implement their respective collection programs until December 31st 2012 for plastic bottles and January 1st 2017 for batteries. Producers that fail to meet their obligations can face fines up to € 30,000 (ibid). MoEPP and the State Administrative Inspectorate, as well as appointed inspectors within each municipality, will be responsible for reporting any misconduct by the producers or their contracted third party (ibid). Meanwhile, both NGOs and private companies work to provide temporary solutions to deal with illegal dumping and informal recycling.

NGOs and the Informal Sector

Extensive parts of the country's rural areas (and to some extent the urban areas) are not covered by any waste collection services (UNEC, 2011). As a result there exist many illegal waste-dumping sites that do not comply with any standards for legal dumping. Both legal and illegal disposal sites are grounds for economic activity by the informal sector; in this case, people who carry out untaxed collection and recycling of all kinds of waste for profit (UNEC, 2011).

The informal collectors collect waste that has commercial value: regardless of their hazardous properties. These include metals, plastics, paper, waste oils, car batteries and accumulators (UNEC, 2011). These activities pose serious health risks to collectors, who are often seen rummaging municipal containers or local landfills (ibid). The informal collectors are also seen and heard driving through neighborhoods making their presence known to people who

would like to get rid of plastic waste, but also old furniture or e-waste such as old TVs and stereos. It is a major link in the existing recycling waste-stream, but the collectors have no rights or protection if they would get arrested or hurt.

The majority of the informal collectors are Roma. The Roma Business Information Centre (RBIC) estimates that approximately 5,000 Roma work with informal recycling in Skopje. They collect mainly PET and other plastic waste, mostly individually, but also together with other family members. RBIC has collaborated with the USAID funded organization called Foundation Open Society Macedonia to improve the economic and social status of collectors of PET and other plastic waste. Together they provide collectors with training, provision of protective clothes and equipment (such as collection bins) that collectors distribute to help encourage primary collection and sorting of plastic waste by the households.

The Plastic Recycling project is another initiative that involves the informal sector (www.plasticrecycling.org.mk). The project was started by USAID and the US embassy in collaboration with local NGOs in 2005. The responsibility for running the project was later transferred to MoEPP in 2009. The initiative included the purchase and distribution of waste bins and containers to selected municipalities (ibid, UNEC, 2011). Two key objectives of this project were to integrate informal waste collectors into the formal waste management system and to strengthen capacities for establishing Municipal PET collection programs (ibid). However, results from this study indicate that the project transfer to MoEPP and the public utilities company “Komunalna Higijena” that is currently in charge of the continuation of the project, has not been completely successful. For one it has created competition over resources between

different formal and informal collectors of waste (more about this in the *Discussion and Results* section of this paper).

A similar project, but for batteries, was initiated by non-governmental organization Bidizelen (Go Green), which started collecting batteries in January 2011 (www.bidizelen.org). Their Go Clean battery disposal awareness campaign consists of three pillars:

1. Institutional cooperation and sharing of experiences with the EU countries.
2. An informative education campaign at schools throughout the country.
3. A promotional campaign for collecting waste batteries at local super markets (Go Green, 2012).

In collaboration with the Swedish, Norwegian, and Slovakian embassies, the organization managed to raise 4 tons of waste batteries between the start of the project and October 2012. This was significant because no private company were willing to buy waste batteries at lower amounts than 4 tons. The most recent development is that MoEPP has offered to take over the responsibility for the project and that a private company have been licensed to care for the waste batteries collected through this project.

Behavioral Change and Social Norms

The process of harmonizing with EU ultimately requires permanent behavioral change on the ground. This is something that both governmental and non-governmental projects aim to do, whether it's through regulatory change or project based initiatives. According to author and environmental psychologist Dr. Dough McKenzie-Mohr a decisive step to fostering sustainable behavior is to uncover the barriers and benefits that either demotes or promotes the targeted behavior (2011). For the purpose of studying the Macedonian EU

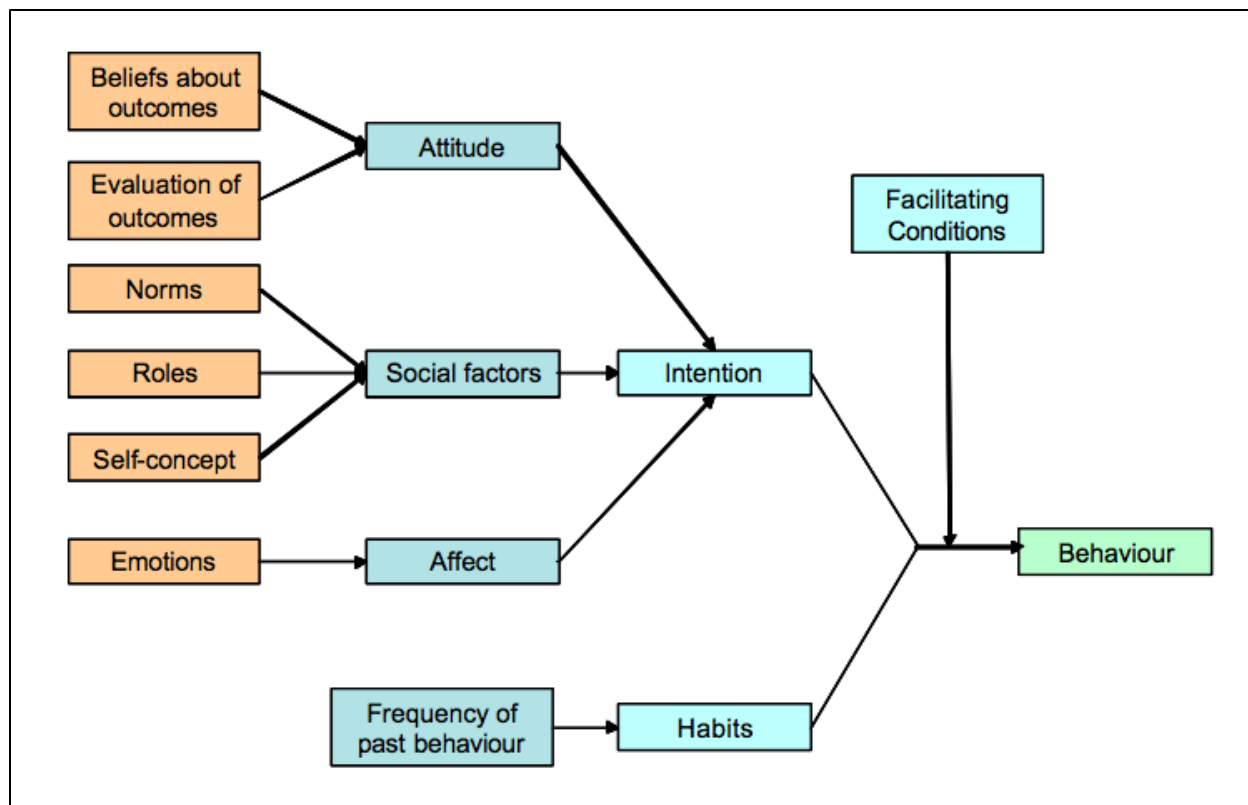


Figure 1: Triandis's Theory of Interpersonal Behavior (Jackson, 2005)

harmonization process I chose recycling of PET plastic bottles and household batteries as my targeted behaviors. For example, according to the authors of the Macedonian National Waste Management Plan (2008-2020) Macedonians have little or no knowledge of what contemporary waste treatment facility and waste treatment entails because most are accustomed to illegal dumping of waste. If correct, this lack of knowledge (provided and attained) can act as a barrier and hamper the implementation of EU directives into Macedonian society. However, Macedonians are in the process of change and it is important to understand where in this process of change Macedonians are in order to provide appropriate support and resources. In fact, programs that do not consider this aspect of change in behavior may do more harm than good (Winefield, 2005). This can ultimately prolong the implementation of new waste management standards and a Macedonian

entry into the European Union.

Triandis's 1977 Theory of Interpersonal Behaviors serves as a comprehensive behavior model for interpreting factors that influence sustainable behavior and in this case the recycling of plastic bottles and batteries (Figure 1) (Jackson, 2005). Triandis's model states that a person's behavior is influenced by their intentions, habits, and facilitating conditions (ibid). In this study I equate facilitating conditions with existing infrastructure (formal and informal), waste management laws, and information about recycling. Intentions are influenced by attitudes, social factors, and affect, whereas habits are influenced by the frequency of past behavior (ibid). Attitudes are in turn influenced by people's beliefs and evaluation of the final outcome, whereas social factors are subject to norms, roles, and self-concept (ibid). Affect in turn is influenced by people's emotions toward the

Robinson's Seven Stages	Relevant Factors in Triandi's Behavior Model
1. Knowledge/ awareness	Attitude
2. Desire – imaging yourself in a different future	Affect
3. Skills – knowing what to do	Actual capacity
4. Optimism (or confidence) – a sense that the effort will count	Perceived capacity
5. Facilitation – having outside support	Facilitating Conditions
6. Stimulation – having a kick-start (overcoming habit)	Habit
7. Feedback and reinforcement	Social Factors

Figure 2: Robinson’s Seven Stages of Social Marketing aligned with Triandi’s behavior model. The image has been adapted from its original form (Winefield, 2005).

targeted behavior (ibid). In a study on sustainable and greenhouse friendly behavior made in South Australia, Triandi’s model was coupled with behavior specialist Le Robinson’s *Seven Doors of Social Marketing Approach* and by doing so the researcher found a way to define where in the process of change people are (Figure 2) (Winefield, 2005). This approach is useful when discussing where Macedonians are in the process of change and helped me better understand the answers provided to me by the respondents in my comparative survey.

For the purpose of this study it is also worth discussing social norms. Social norms have proven very important when trying to influence people to recycle, and in particular descriptive and injunctive norms (Cialdini, 2003). The descriptive norm is what other people commonly do in a situation. The injunctive norm is what people typically approve or disapprove of in a given situation. Since people tend to follow what is socially approved of, as well as what is popular, the targeted behavior is reinforced when the two norms are aligned. But if efforts (regulation or informational campaigns) focus individuals’ attention on a

behavior that is expected by the majority but not performed by that majority, it instead has the potential to increase the occurrence of the offense.

These models and concepts of behavioral change offers a good starting point for analyzing why Macedonians recycle or not, where they are in the process of change, and how we can use this knowledge to make better decisions on how to implement new waste management laws on the ground. To not take into account possible behavioral barriers and potential benefits could lead to a drawn out and more expensive implementation process than necessary. This study is a starting point for thinking broadly and inclusively about waste management and recycling in Macedonia during the process of harmonization.

METHODOLOGY

Participants and Sampling procedure

The research was conducted in the Macedonian capital Skopje. Skopje is the largest city in Macedonia and approximately 480,000 people live there. The survey

included 150 participants, as follows: 137 participants from the general public and 23 professionals working with waste and/or recycling in the civil society, private, or government sectors. All participants were above the age of 18 and interviewers contacted the general public in three general manners: respondents were solicited at their homes; passers-byers were approached at the centrally located University; or already recruited respondents asked their friends, families, or colleagues to complete the survey and surveys were picked up by the interviewer at a later occasion. Potential respondents were asked whether he or she would like to participate in a survey on recycling and waste management. The professional respondents were selected based off of their merits of working in the field of waste management and recycling. The professional survey group included representatives from: NGOs, the Macedonian parliament, MoEPP, embassies, private business, regional think-tanks, municipal councils and government, as well as legal entities contracted by producers of waste to collect waste and recyclables. All of the Professional respondents completed the survey during scheduled meetings.

Survey

Two multi-sectional surveys were constructed, one for the general public and one for the professional survey group. The surveys included items accounting for: environmental behavior; perceived importance of the quality of public services; waste and recycling habits and knowledge thereof; social and environmental attitudes and dispositions; and demographics. The surveys were originally constructed in English and later translated to Macedonian, which is one of the official languages in Macedonia (the other being Albanian). Respondents were guaranteed anonymity

and each survey took approximately 15 to 25 minutes to complete

The survey that was given to the professional survey group differed from the general public's in one aspect: several questions were constructed so that the professional survey group had to answer what they believed the general public would answer on that same question. The purpose was to examine barriers and opportunities that related to assumptions made by the professional sector about the general public.

Survey Analysis

Percentages were calculated for each question and all results in this study were conducted with a 95% confidence interval margin of error for a population proportion.

$$p - 1.96 \sqrt{\frac{pq}{n}} \leq p_0 \leq p + 1.96 \sqrt{\frac{pq}{n}}$$

All margin of errors calculations are displayed in Appendix 1.

Interviews

The survey taken by the professional respondents was followed by an open question interview on the topic of harmonization, recycling, and waste management. The interview was meant to complement the fact that there only exist so many "professionals". The interview was recorded using an audio recorder and the respondents were guaranteed anonymity. Interviews lasted between 15 minutes to 1 hour. The interviews were conducted in either English or Macedonian.

RESULTS AND DISCUSSION

Based on the two surveys, interviews, and literary review. I have come to a total of nine observations. These observations

support the final three arguments made in the beginning of this paper, which is that: people are supportive of recycling measures but there are normative barriers that influence why the general public recycle or not; there appears to be a lack of communication and collaboration between official stakeholders; and there is little done to address unintentional competition between informal and formal collectors of waste or to include the informal sector in the official decision making process. The observations are as follows:

1. Lack of knowledge and awareness among the general public is not as big of a barrier as commonly suggested.

The general and professional respondents were asked to explain what recycling is and list some items that are recyclable. Most respondents gave examples of items that they think are recyclable and words that they associate with recycling, although few wrote full sentenced explanations of what recycling is. Words that occur often in the respondents' answers were: paper, bottles, plastic, re-work, and re-use. Batteries are also mentioned, but not to the same extent that paper, bottles, and plastic. This does indicate a need to inform the general public more about battery recycling.

When asked what benefits recycling would bring to Skopje the overall answer was "clean and healthy surroundings and environment". Words that occurred often among the general public were: clean, healthy, environment, surrounding, conservation, preservation, and less pollution. The professional survey group focused more on the economic and social advantages of recycling, such as creating new jobs and raising environmental awareness. Many of the professional respondents also talked about the effect

recycling would have on reducing waste in general. Words that occurred more often among the professional survey group were: jobs, work, awareness, and waste reduction. When asked what the negative impacts of recycling are a majority answered in one way or another that there are no negative impacts of recycling. Overall, the results indicate that a lack of knowledge and awareness is not as big of a barrier as commonly suggested, but that people's knowledge of and attitude toward recycling is generally good. If we refer back to Triandi's model we can then argue that Macedonian's intention to recycle is not pointedly affected by their attitude towards recycling.

2. There is interest in and support for recycling measures.

Almost all respondents in both survey groups (general 93 % and professional 96 %) answered that recycling and diversion is good for the city of Skopje ($N=137$), $p < 0.05$ vs. $N = 23$, $p < 0.05$). Moreover, both survey groups were asked if they would support raising taxes if that would help meet the city's recycling goals and the general public respondents that were for taxes outnumbered those who answered against increasing taxes (29% vs. 12%). However, 54% of the general respondents said that whether they would pay taxes also depends on how much they are expected to pay ($N = 136$, $p < 0.05$).

The general survey group was asked what maximum amount they would be willing to pay extra on their monthly garbage collection bill to have recycling of plastic bottles and batteries included in their curbside collection service and 84 % of the general respondents said they are willing to pay an additional monthly amount in order to receive curbside recycling of plastic bottles and household batteries ($N = 130$, p

< 0.05). When asked what the maximum amount they would pay per month for this service would be, then 31% answered that they would be willing to pay a maximum of 100 denar and 21% answered that 50 denar a month. Only 11% answered that they would not like to anything pay at all for this service.

Going back to Triandi's Theory of Interpersonal Behavior, beliefs about outcomes influence people's attitudes, which in turn influence peoples intentions and finally their behavior. It is clear that respondents believe that recycling is good for the city of Skopje and the results suggest that they would be willing to pay for improvements. Efforts to promote recycling could therefore be focused on strengthening the connection between beliefs and actions consistent with those beliefs, rather than convincing the general public that recycling is good. Moreover, people's willingness to pay extra for recycling points to both a will and capacity to support changes to the waste management system. It may be a matter of finding the amount that the general respondents are willing to pay (which these results suggest falls somewhere between 100 to 50 denar).

3. There is a belief that waste and recycling management has not yet hit its potential.

When asked to describe their satisfaction with the existing garbage system the answers indicated that there is room for improvement. Only 2% of the general public respondents find the existing garbage system very satisfactory, 27% find it satisfactory, 57% find it somewhat satisfactory and 12% find it not satisfactory ($N=137, p < 0.05$). In comparison, 44% of the Professional survey group find the existing system satisfactory, 39% somewhat satisfactory, and 17% not satisfactory ($N=23, p < 0.05$). No one in the professional survey group finds the existing

garbage system very satisfactory. Respondents were then asked if something could be done to improve their satisfaction with the existing garbage and recycling services. Without further explanation most people simply answered, "yes".

Emotions and affect have a bearing on individual's intentions to behave in a certain manner (Jackson, 2005). Therefore respondents' emotions toward the existing system could have a bearing on their intentions to change their behavior. This leads me to believe that improvements to the existing curbside waste management system could improve the general publics overall feelings toward waste management, and ultimately influence them to recycle as well.

4. There need to be more recycling infrastructure and better information about existing recycling options.

The general public was asked if they knew where in Skopje they could recycle plastic bottles and batteries: 36% knew where to recycle bottles and 34% knew where to recycle batteries. On the same token the professional survey group was asked if they think that there is enough information available to the general public on where to recycle bottles and batteries: 74% answered no on bottles, and 87% answered no on batteries. The battery collection containers are located by the entrance at all stores of the four biggest supermarket brands and according to the results a 100 % of the respondents shop at one of these supermarkets at least once a month. Still only 34% of the general public respondents have heard about the Go Clean battery campaign. Hence, giving the general public access to recycling bins is not enough to facilitate the targeted behavior and additional efforts are needed to overcome barriers that prevent people from recycling.

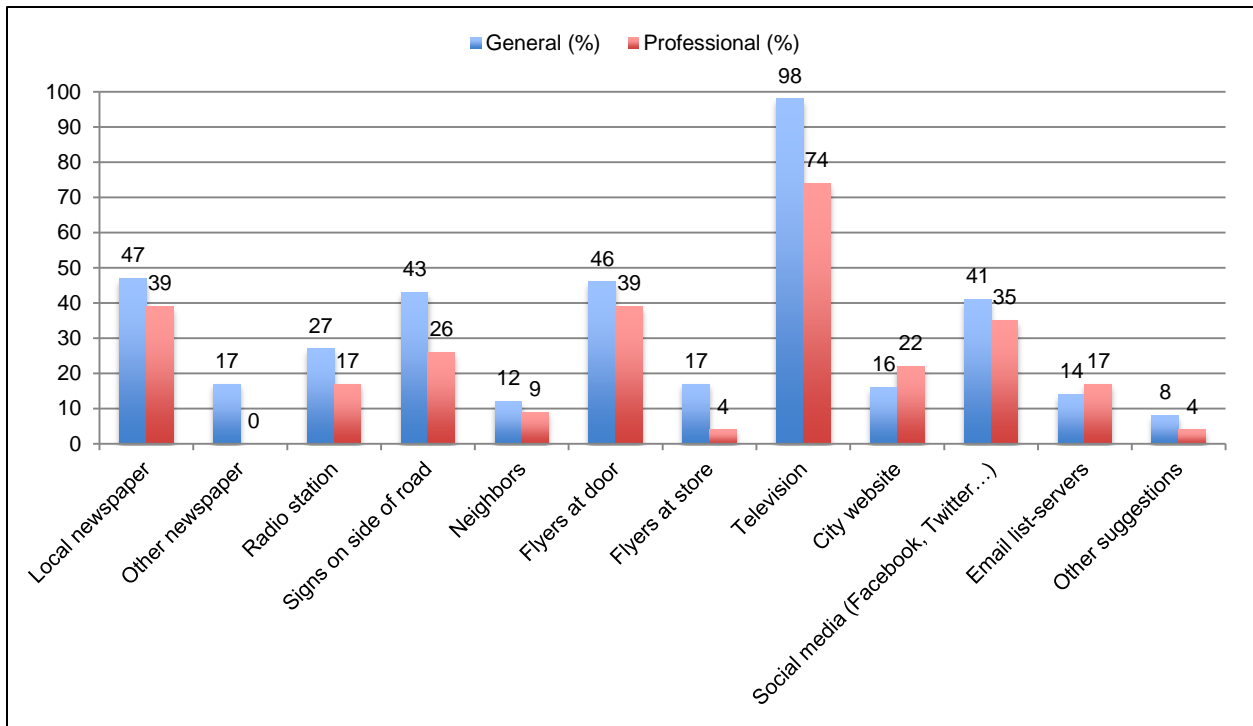


Figure 3: The chart shows the answers from the general respondents when asked “What are the best ways to inform you about cleanups, garbage or recycling services?” and the professional respondents when asked “What do you think are the best way to inform the general public about cleanups, garbage or recycling service?”

The most effective ways to inform the general public about cleanups, garbage, and recycling services is through the television, which gathered 25% of the general respondent’s answers. Other effective ways to inform the public is through local newspapers, signs on the side of the road, flyers at the door, and through social media. *Figure 3* shows that the Professional respondents have a fairly good understanding of how to best inform citizens on cleanups, garbage, and recycling services, which can be considered an opportunity. The professional respondents know where and how to inform their citizen and perhaps it is a matter of allocating resources to actually inform them.

5. There is a strong personal and injunctive norm of recycling, but a weak descriptive norm.

People living in Skopje are (as earlier suggested by this study):

knowledgeable and aware of what recycling is; optimistic about what positive effects recycling can have on the city; and perceive themselves as capable of supporting changes to the waste and recycling collection system. Yet, recycling, as it exists now has not reached its potential. This leads me to believe that there is a strong personal norm (the *me* norm) and injunctive norm (the *ought* norm), but a weak descriptive norm (the *is* norm) (Cialdini, 1990). Schwartz’s norm-activation-theory suggests, “behaviors are the result of a personal awareness of the consequences of ones actions and the ability and willingness to take responsibility for those consequences” (Jackson, 2005). People believe that recycling is good, and know that it is something that they ought to do, but cues from their surrounding suggest that it is not what most people do so their personal efforts do not seem warranted (Cialdini, 1990). In practice this means that if a person sees trash next to the recycling bin or in the streets, then recycling seems

like a wasted effort. This puts a lot of meaning into the importance of collaboration between different stakeholders along a single waste-stream, but also across parallel waste streams. Recycling cannot be treated as a separate project, if that means that there will be no changes in how waste is treated overall.

6. There seem to be ungrounded assumptions made by the professional survey group about why the general public do or do not recycle.

If the general respondents answered that they recycle neither bottles nor batteries, then they were prompted to answer a follow-up question asking what their reason is for not recycling. Meanwhile, the professional respondents were asked what they think is the reason why people in Skopje do not recycle bottles or batteries. 65% of respondents in each survey group said that the reason the general public does not recycle plastic bottles is because they lack access to recycling bins (± 9 vs. ± 19). Similarly 61% of the professional respondents said that the general people do not recycle batteries because they lack access to recycling bins. In comparison 66% of the general public gave this reason for not recycling batteries. On the other hand 30% of the professional respondents answered that the general public do not care about plastic recycling and 22 % (± 17) answered that the general public do not know what recycling is, whereas only 2 % (± 3) of the general respondents answered that they do not care about recycling plastics and 1 % (± 2) that they do not know what recycling is. Instead

the general respondents stressed that they do not produce enough recyclables to warrant the effort ($30\% \pm 9$) and that the waste service provider do not collect the items that they want to recycle ($24\% \pm 8$).

A larger professional sample group might have made these results more statistically clear, however, the professional respondents expressed these doubts about the general public during the interview as well. It is however worth mentioning that an individual in the general group is less likely to admit to not caring about recycling if there is a strong injunctive norm for recycling, since the respondent might be embarrassed to admit that they do not care about recycling. Still, these results indicate that it is worth to further examine the reasons why people do or do not recycle since currently the professionals are basing their decisions more on their beliefs about the general public rather than thorough questioning and results.

7. Respondents are unclear on the allocation of responsibility for carrying out implementation.

When asked if there are any groups that the respondents think should recycle more both survey groups seem to agree that government, parks and street management, markets and supermarkets should recycle more. The professional respondents answered to a higher degree than the general respondents that businesses (57% vs. 31%) and universities (39% vs. 15%) should recycle more. Statistically there is some overlapping, which a larger professional sample size might adjust for.

The respondents were also asked whom they think should be responsible for recycling: state, private companies, individuals, or municipalities. The answers are displayed in *Figure 4*. The answers indicate that the general respondents are in favor of some sort of governmental responsibility, by either state or municipality, whereas the professional survey group distributed their answers more evenly between the four options. Both groups gave least emphasis to the responsibility of the producers of waste.

The spread in opinion among the professional respondents was evident in the interviews as well. Several professional respondents said in their interview that municipalities should take more responsibility for implementing and enforcing the laws. However, the municipal professional respondents stated in their interview that the responsibility is with producer of waste and the public utilities company, which provide the municipalities with waste management services. A common opinion was that the responsibility lies with the Ministry of Environment and Physical Planning (MoEPP). That without the enforcement and pressure from MoEPP and the Inspectorate there would be no reason for producers of waste to pay their dues. And that without the producers paying, either MoEPP or one of the three companies licensed to handle waste on their behalf, there would be no collection of recyclables.

One respondent argued that the existing ambiguity over who has the responsibility for implementing the laws happened because of how the EU directive were transposed into Macedonian law. According to the respondent no preparatory analysis was made to see if there needed to be circumstantial adjustments to the laws. In fact several respondents said that there are problems with implementation because the laws are simply copied and pasted from the

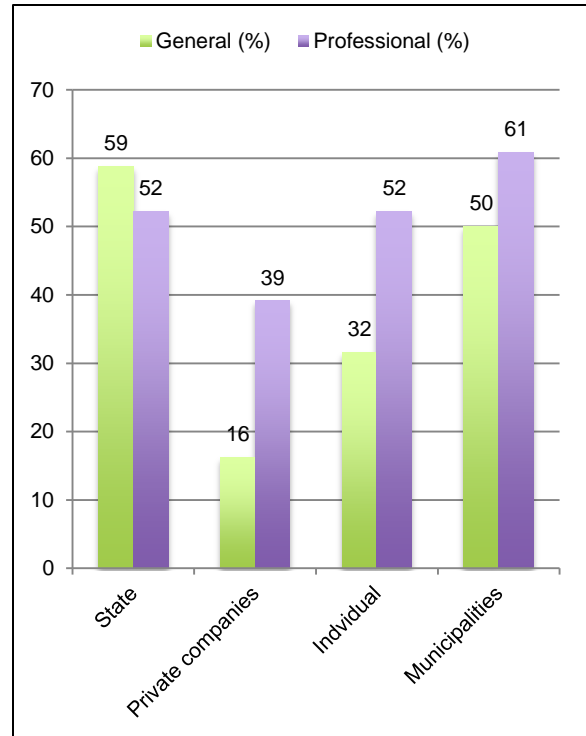


Figure 4: The chart indicates at what level and within what sector the respondents think recycling should be organized.

EU directives into Macedonian law. As a result there is no detailed system for how to carry out recycling schemes, but instead it is up to the producers themselves to decide upon methods of collection.

According to one respondent the laws are in fact setting the responsibility, but there are no rules on how the producers should branch out and target the households. Although the law works insofar that the producers are meeting their target goals for what they need to recycle, recycling programs still remain within the boundaries of industry and business. In fact, there exist a concern among some of the professional respondents that producers will not target households until they are required to do so in order to meet their targets goal.

8. There exists unintentional competition between informal and formal collectors.

Recycled plastic is an unconventional, but nonetheless valuable resource. The informal sector has collected PET plastic bottles for many years without any serious competition from the formal sector, but some of the new recycling initiatives have limited the informal collectors' access to this resource thus creating unintentional competition between the informal collectors themselves and between the informal collectors and the informal now formalized collectors. On many occasions I observed that the plastic bottle collection containers had been made inoperable because the heavy container lids had been flipped over to cover up the hole where the recycling should have gone. As a result the general public were forced to leave their recyclables on the side of the container. A professional respondents explained that informal collectors without access to the contents would do this and come back to pick up the recyclables left on the side at a later moment. The respondent also explained that informal collectors would come at night and cut open the container and collect the plastic bottles that way.

The existing PET plastic bottled containers were originally distributed by the USAID funded Plastic Recycling Project and are currently administered by the public utilities company Komunalna Higiena. They have as a project goal to involve the informal sectors in formal collection of plastics. Also Pakomak hires collectors from the informal sectors through The Roma Business Information Centre (RBIC, 2012). However, existing projects do not have the capacity at the moment, or intention, to hire every informal collector. Meanwhile, neither the WMS and NWMP, nor the laws governing waste, plastics, or batteries mention how to involve the informal sector into plans for future waste management. One professional respondent mentioned that

the municipalities needs to work more closely with local informal collectors on how to best integrate them into the formal sector. The same respondent stresses that although there is a need for more regulation, municipal authorities are not to interfere with collector's habits and social lives or jeopardize the income of the informal collectors. Ultimately, the informal collectors themselves will know best how to formalize their own work, which means that they need to be more involved in the planning and decision process.

9. There is a lack of communication and collaboration between professional stakeholders.

A reoccurring comment from the professional respondents was that there is a lack of communication and collaboration between the professional stakeholders including: MoEPP, NGOs, the producers of waste, municipalities, public utility companies (such as Komunalna Higiena) licensed collectors of recyclables (such as Pakomak), informal sector, and other engaged actors (such as embassies, development agencies, and various supportive organizations). According to one respondent the mechanism for coordination and exchange of information between the institutions is underdeveloped. The same respondent said that although the different ministries are communicating they are not communicating well enough. Several respondents mentioned the need for an umbrella institution that organizes efforts between different stakeholders. One respondent was more specific and argued for the benefits of having an Environmental Agency, similar to the American EPA or Swedish SEPA.

Moreover, there seem to be a disjoint in the communication between MoEPP and working NGOs on the ground. The ministry

is expecting the NGOs to come to them for and with information, but there appear to be little effort on the part of the ministry to facilitate that communication. Similarly, one respondent mentioned that the public utilities company Komunalna Higiena do not properly communicate with local authorities and therefore have limited knowledge of what is going on in the field. Overall there seem to be a need for capacity building within and between organizations and stakeholders.

CONCLUSION

The biggest driver for environmental reform in Macedonian is accession to the European Union and to become a member Macedonia has to raise the standards of its waste management system to match the standards described in the European acquis. Although Macedonians have had problems with their waste management system, at least a lack of knowledge and awareness of waste and recycling management does not appear to be as big of a barrier as often assumed. Instead the general public appears to have an invested interest in supporting changes to the existing waste management system. In fact, neither the Macedonian general public nor the professionals working with waste management in Macedonia seem to believe that waste and recycling management has reached its potential. These are all opportunities that should be considered in the process of implementing recently transposed waste management laws, but there are also barriers that need to be considered.

Even though Macedonians are positive towards change and intend to support changes in waste management, there are currently social factors and facilitating conditions that are influencing them not to act on those intentions. Macedonians seem to believe that recycling is good, and know

that it is something that they ought to do, but cues from their surrounding suggest that it is not what most people do so their personal efforts do not seem warranted. There need to be more recycling infrastructure and better information about existing recycling options, however, recycling efforts are currently being thwarted by a failing waste management system, and unless the general surrounding is cleaned up then the general public will not feel that recycling is warranted. Since Macedonian waste management laws are harmonized to the European acquis, changing how waste is handled is dependent on how these laws are interpreted and implemented.

Most respondents seem to believe that the first step toward facilitating positive change has to start at the level of government, more specifically MoEPP. At the moment there seem to be a lack of communication and collaboration between the many professional stakeholders who are working to establish recycling in Macedonia and this suggest an additional need for capacity building. This process of capacity building has to be inclusive of all stakeholders and in particular of the informal collectors. The informal collectors have so far been involved with the implementation of the Law on Packaging and Packaging Waste and the Law on Batteries and Accumulators on the ground where they have been hired to collect recyclables. However, they need to be involved in the decision process as well. This way you avoid the problem of creating unintentional and misguided recycling schemes that cause further marginalization of a group that is already earning an income from illegal collection of waste.

A question that needs more investigation is whether there exists a stigma towards Roma people that works to exclude them from the decision making process. It seems likely considering that this group has

a history of being marginalized and considering that as informal collectors they stand outside of the law. Another unanswered question that need further investigation is how to best align Macedonian's positive attitudes, affect, and personal norms with collective acts of recycling in order to create a positive descriptive norm? For this to happen you need to consider what recycling schemes are specifically amenable to Macedonians and only the Macedonians themselves can answer this question. This study is a starting point for such an evaluation and a larger and more expansive study could help answer some of the abovementioned questions.

Not taking these barriers and opportunities into consideration is to increase the cost and time it will take to implement the Law on Packaging and Packaging Waste as well as the Law on Batteries and Accumulators. This ultimately prolongs the process of becoming a member of the European Union. Macedonian harmonization to the EU *acquis* facilitates the conditions that influence recycling and proper waste management and in the process of applying for European membership Macedonia has a unique opportunity to bring well-needed improvements to their population and country while receiving support from other EU members. Macedonian officials should take advantage of this opportunity, but always be conscious of circumstances that are particular to Macedonia and the Macedonian people.

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APPENDIX: Margin of Errors

(95% confidence level percentages given a particular answer.)

A particular answer expresses as percentage of the sample size (General public survey group)									
Sample	5%	10%	15%	20%	25%	30%	40%	45%	50%
Size	95%	90%	85%	80%	75%	70%	60%	55%	50%
137	3.69	5.07	5.91	6.75	7.30	7.67	8.21	8.33	8.37
136	3.71	4.94	5.95	6.70	7.28	7.71	8.25	8.36	8.40
130	3.6	5.2	5.5	6.2	6.8	7.2	7.9	8.2	8.4
A particular answer expresses as percentage of the sample size (professional survey group)									
Sample	5%	10%	15%	20%	25%	30%	40%	45%	50%
Size	95%	90%	85%	80%	75%	70%	60%	55%	50%
23	8.91	12.3	14.6	16.3	17.7	18.7	20.0	20.3	20.4