



Delft University of Technology

Situation and behavioural analysis of consume and waste behaviour and patterns

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URBAN-WASTE

Urban strategies for Waste Management in Tourist Cities

D3.2

Situation and behavioural analysis of consume and waste behaviour and patterns

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Abstract

Del 3.2 aims at analysing the existing literature on tourism and waste behaviour of tourists. Based on this literature review and with the aim of filling the knowledge gap about waste behaviour of tourists, URBANWASTE has developed and circulated 3 surveys for 3 different categories: waste workers, tourism



workers and tourists. The surveys have been circulated among the 11 pilots of the project and the results of this survey has been analysed within this Deliverable.

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List of abbreviations

CE	Consulta Europa
TUD	Delft University of technology
UCPH	University of Copenhagen
GA	Gender Auditor
WP	Work Package
D	Deliverable
CoP	Communities of Practices
ICT	Information and Communication Technology
EU	The European Union
EC	European Commission
EASME	European Agency for Small and Medium Enterprises



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1. Executive Summary

Studies about tourists' or visitors' waste behaviour in relation to merely waste generation and/or waste management are almost non-existing. Accordingly to existing literature, waste behaviour is considered as part of the more general environmental behaviour and/or sustainable behaviour.

Tourists with a higher eco-friendly attitude are more likely to be engaged in pro-environmental behaviour. Also, tourists who are more ethical, more law obedient and more politically active are more likely to show a tourist eco-friendly attitude (Loenidou et al., 2015). **However, there is a gap between environmental attitudes and actual (tourist) behaviour.** Even tourists with an enhanced eco-friendly attitude show indeed less commitment to pro-environmental behaviours when on holidays. Current literature provides various explanations for this:

- Increased available financial resources.
- Lack of waste infrastructure at holiday destinations.
- Existence of a temporarily 'tourist culture' that encourages alternative behaviour which is associated with a relaxation of domestic social norms while on holiday.
- Trade-off between the sacrifice of comfort and environmentally sound behaviour. This trade-off is likely to be perceived as stronger in a touristic context, which is fundamentally about pleasure and not sacrifice.
- Level of regional identification of tourists with their holiday destination. Lower levels of regional identification will decrease environment-friendly behaviour.

There is also some evidence about the fact that tourists from different countries of origin have different eco-friendly attitude and behave differently. This may be due to differences in strictness of environmental laws at home countries or differences in evolutionary processes in environmental thinking in different countries.

To further explore tourists' waste behaviours and to contribute to fill this knowledge gap, the URBANWASTE project developed and circulated **three surveys targeting three different categories** considered relevant for providing a significant insight on waste and tourism value chains: **waste workers, tourism industry operators and tourists**. By the 9th of January 2017, a total of 1179 surveys have been collected and among those: 375 for waste workers, 412 for tourism industry workers and 391 for tourists. Responses received after this date has not been considered within this analysis.

The questionnaires directed to waste workers and tourism workers mostly aimed at understanding the influence of tourism in waste production and management of the pilot cases included in the URBANWASTE analysis. **The analysis of this data will feed the urban metabolism analysis that is taking place in parallel within WP2 and will contribute to provide a comprehensive overview of the state of the art in terms of waste and tourism in the 11 pilots considered in URBANWASTE.** Moreover, this integrated analysis will contribute to identify relations and pinpoint drivers of waste-avoiding behaviours.

On the other hand, the survey targeting tourists is more focused at understanding the behaviours and the individual choices in terms of waste production and management of people when on holidays. **The underlying idea is to gain a better understanding of the main barriers, in terms of motivation, information provided, existence of the infrastructure, etc. that could hamper or influence tourists' waste behaviour.**



All the surveys have been cross-tabulated to include the gender perspective in the analysis. The questions have been merged in thematic groups to better perform the analysis and to provide a clearer picture of the general outcomes.

Questions have been grouped in the following categories:

- 1) Relation tourism and waste
- 2) Waste management / information in city
- 3) Individual (tourists) behaviour /company's waste management
- 4) Preferences / accommodation choice
- 5) Suggestions for improving waste behaviour / situation

The main outcomes can be summarized as follows:

1) Relation tourism and waste

Most of waste workers state that tourism contributes significantly to the local economy in their city or region. **51% of the tourist workers stated that tourism affects waste production significantly.** Among the waste workers and tourists this corresponded to the 47% and the 37% of the respondents.

Among the waste workers, **hotels and restaurants are most often seen as the tourism's 'main' sources waste production.** This corresponds with their opinion that tourism increases 'very much' food waste production.

A majority of the waste workers (65%) rated waste management in their city/region as 'pretty efficient'. **The two most popular waste management priorities among the waste workers are 'awareness raising on citizens and business' (55%) and improvements on waste collection systems (53%).** Waste prevention and re-use, which are the two highest stages of the waste hierarchy have much lower levels of prioritization with respectively 35% and 26% of the waste workers who stated that these should be waste management priorities.

2) Waste management / information in city

The satisfaction with the quality of the provided information on waste management and collection varies considerably between the pilot cases but also between tourist workers, waste workers and tourists in each pilot case. Among the totality of the surveys, only 20% of respondents think that the information provided about waste collection is very good or good, while almost 40 % rate it as very poor or poor. Interestingly, in both Portuguese cases (which present a relatively high response rate), Ponta Delgada and Lisbon, tourist workers and tourists are quite satisfied with the provided information, while in Lisbon waste workers are less satisfied than in Ponta Delgada.

Another relevant observation is that waste workers show for all activities by far higher satisfaction regarding municipalities' waste prevention activities than the tourist workers, except for Santander, Dubrovnik and partly Nice. Consequently, from the tourist workers' perspective a lot of catching up in waste management/prevention activities is required.

3) Individual (tourists) behaviour /company's waste management

Concerning tourists' individual behaviour, three main outcomes have been identified:



- **Individual's behaviour change when on holiday;** waste sorting and prevention has been found to be very common among people at their households (among 80% for the most common waste fraction- paper, plastic and glass) while, concerning the same waste fraction, there is a clear drop in sorting their waste when travelling of about 20%. The same applies for food waste, as 39% of respondents stated that they are really concerned about avoiding food waste at home, while just 27% cared at the same level when on holidays.
- Behavioural change it is considered really relevant in terms of waste production by more than 60% of respondents
- As for the actions to better influence people to reduce/better manage their waste, **educational programme and awareness raising campaigns** raised as the most important reaching almost 50% of share of respondents. Waste fees and sorting incentives were also considered really relevant by more than 40% of tourists.

4) Preferences / accommodation choice

According to the responses related to the relative importance of identified criteria that are influencing the choice of the accommodation when on holidays – as price, location, environmental awareness, hotel rating, leisure activities and room facilities - **it clearly stands out that price and location are the most relevant factors influencing tourists' accommodation choice.**

5) Suggestions for improving waste behaviour / situation

In terms of improvement of waste behaviour, the vast majority of suggestions point at information and awareness-raising as the best way to improve tourists' waste behaviours. Hotels accommodation providers and other tourist hotspots are considered responsible for providing this information to tourists. According to tourists - and against the major suspicion of waste and tourist workers -, it is not a lack of motivation that prevents them from sorting waste, but scarce information about waste facilities, inadequate infrastructure as well as scarce information about consequences. Therefore, more information relate to this is required by tourists.

Gender analysis

There is no available research on the attitudes towards waste of workers in the tourism sector; therefore, the only gender assumption is that informed data analysis was that employment in the tourism sector is gendered, with higher paid management jobs dominated by men and lower paid administrative and manual jobs dominated by women (Gibson, 2001). This distribution was confirmed in survey respondents from the tourist industry. There is little gender differentiation in responses regarding how tourists manage their waste, and on how the waste authority is perceived to perform locally. However, it is noticeable that, with respect to awareness raising and education issues, women working in the tourism sector are more negative than men, regarding what information is made available to both tourists and tourism businesses. Regarding incentives to encourage tourists to reduce their waste, women tourism workers were more likely to identify named rewards.

The profile of waste managers in departments in which the survey respondents work matches national and European profiles of waste management workers (IMF, 2016). This information reinforces an industry profile dominated by male managers and technicians, which is likely to have an impact on decisions making. The survey reveals that women respondents are more concerned with waste management priorities which relate to behaviour, while men are more concerned with those which relate to operations. This may generate an impact



on local waste management strategies, depending on the gender balance of decision makers in waste management teams.

Women tourists responding to the survey were more likely to undertake domestic waste management/sorting at home, consistently with surveys on environmental behaviour (for example, Eurobarometer, 2014), although no gender differences emerged for recycling attitudes in the survey. When on holiday, men are less likely to dispose of waste responsibly, which is consistent with Loenidou's findings (2015) reported in the literature review in Section 1.1. When at home, women respondents were more likely to have thought about waste reduction, and to have taken action to reduce the amount of waste they produced. In terms of the incentives that would stimulate them to reduce waste production when on holiday, women prefer tangible rewards (this relates to a similar preference expressed by women working in tourism, see 3.3.1 above), while men prefer better facilities and information. However, when asked about how their waste behaviour is influenced, women are more likely to cite education, awareness and ethics than men, who state that they were most influenced by financial and health considerations. Women expressed slightly more concern than men about food waste as a significant problem both at home and when on holiday, which is likely to relate to women's enduring unpaid care work (EIGE, 2015). A stronger difference is found in how important women think the environmental credentials of their holiday accommodation is as a booking consideration, compared to men.

Even though the survey involves a small sample of respondents, and the data has not been tested for statistical significance, there are indications to suggest that gendered attitudes and reported behaviour may impact on waste management by individuals on holiday, and by professionals in tourist destinations. Relationships between attitudes, reported behaviour and gender revealed by the survey are consistent with research on gendered environmental attitudes and behaviour elsewhere. The data as analysed so far has been used to inform focus groups of each of the three survey population groups and it is expected that the result of these discussions will reveal some explanations for attitudes and reported behaviour, and give more depth to the quantitative data. Given the lack of research on gender and waste in tourist areas, the gender component of the survey provides a basis on which to develop greater understanding of how gender, waste and tourism intersect.

General remark

At the moment the data have been analysed, not all the pilots managed to reach the agreed target (50 replies for each survey). In some cases, this led to a difficult reading and understanding of the data collected. Nevertheless, the information collected can be considered as an important step further in understanding the perception of tourist and waste workers on the impact of tourism on waste management and production within the URBANWASTE pilot cases. Moreover, considering the tourists' survey, the information provided by the tourists involved can be considered a useful input for improving the waste management and communication strategy of the pilots involved, thus contributing to an overall improvement in their performance. In this regard, a second round of the tourists' survey will be done in spring 2017, and a more detailed analysis of that results has been foreseen. A scientific publication submitted to peer review will gather all this additional data to identify the consume and waste behaviour of tourists in Europe.

2. Waste Behaviour and Tourism

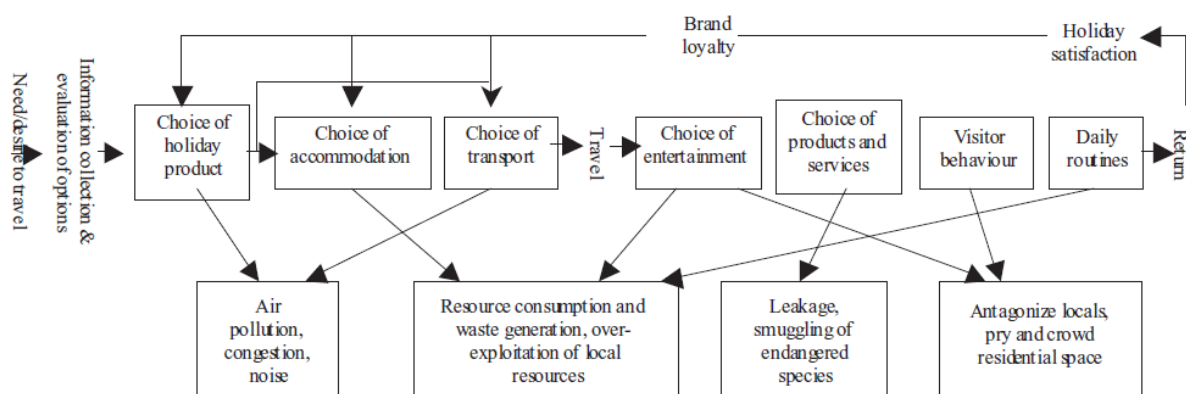
2.1 Tourism and environmental friendly behaviour

2.1.1 Drivers of attitudes and behaviour of tourists in relation to environmental issues

Studies about the waste behaviour of tourists or visitors in relation to merely waste generation and/or waste management are almost non-existing. In the literature waste behaviour is seen as part of the more general environmental behaviour and/or sustainable behaviour. Waste is seen as only one aspect of the wider issue of negative effects of tourism in general, which varies between buying responsible tourism products, choosing environmentally friendly transportation and behaving in a responsible way towards destination communities (Budeanu, 2007). Generally, sustainable behaviour is used in a wider sense than environmental behaviour.

Environmental behaviour is related to waste and energy, whereas sustainable behaviour includes environmental behaviour but also behaviour about social issues such as towards destination communities. The choices that tourists (have to) make in preparing for their holiday and during their holiday are associated with very different environmental impacts, of which waste generation is only one, as is shown in Figure 1. The choices regarding accommodation, entertainment and daily routines are most likely related to waste generation but also to other environmental impacts. Probably for this reason there are very few studies which concentrate exclusively on tourist waste behaviour. For this reason, and because the theoretical framing of tourist behaviour in general, we focus this literature review on sustainable tourist behaviour.

Figure 1: Tourist holiday choices and associated environmental impacts, according to Budeanu (2007: 501)



Sustainable tourist behaviour is one of the issues in the wider sustainable tourism research agenda. Although tourism researchers turned their attention to environmental issues almost four decades ago, the research progress on issues such as cultural contexts, individual values, behaviours and responsibility is qualified as “low” by Buckley (2012: 536) in his review paper. In contrast, he qualified the practical importance of this issue for the



tourism industry as “high” and gives it the “highest” research priority. Other review papers confirm this indefinite picture of the state-of-the-art of sustainable tourist behaviour research. For instance Myung et al. (2012) who focus their review on environmentally related research in scholarly hospitality journals conclude that research of consumer behaviour “of going green” (p. 1269) is largely lacking and requires more research attention. They also concluded that studies often found contradictory results. In 2009, Lu and Napal found that 15% of all papers published in the Journal of Sustainable Tourism between 1993 and 2007 had a research perspective on visitor behaviour and attitudes. Two other review articles (Bâc, 2014; Zolfani et al. 2015) in less well known journals do not identify tourist behaviour as a separate issue. Although this is partly due to the scope of the reviews, it illustrates that sustainable tourist behaviour is not a core issue in the research field of sustainable tourism. Hence, only a small section of literature on this research is really relevant for this review.

Despite this conclusion some papers give insight in the drivers of sustainable tourist behaviour. One of these studies, by Loenidou et al. (2015), gives an overview of general literature about sustainable attitudes and behaviour, and applies this to their research on tourists visiting Cyprus. Their main hypothesis derived from literature is that “The more positive tourists’ eco-friendly attitudes, the more likely they engage in pro-environmental behaviour” (p. 639). Based on their survey Loenidou et al. conclude that tourist eco-friendly attitude is a significant predictor of eco-friendly behaviour. The tourist eco-friendly attitude itself is related to three background attitudes: deontological status (the normative ethical position of a person), their law obedience and their political action. So tourists who are more ethical, more law obedient and more politically active are more likely to have a tourist eco-friendly attitude. Furthermore, these authors consider the relation between these personal attributes and eco-friendly attitudes to be moderated by four personal characteristics:

- Gender. The effects of deontological status, law obedience and political action on eco-friendly attitudes are stronger for female than for male tourists.
- Age. Generally, it is believed that the effects of deontological status, law obedience and political action on eco-friendly attitude are stronger for older than younger tourists. However, the research by Loenidou et al. shows no moderating effect of tourists’ age on the association between political action and eco-friendly behaviour.
- Education. Generally, it is believed that the effects of the three personal attributes on eco-friendly attitudes are stronger for higher educated than for poorly educated tourists. The research confirmed this effect for the links between deontological status and political action and eco-friendly attitude, but not for the relation between law obedience and eco-friendly attitudes.
- Income. The effects of deontological status, law obedience and political action on eco-friendly attitudes are stronger for more affluent than less affluent tourists.

Besides the recent paper of Loenidou et al. (2015), there is one other frequently cited paper, by Andriana Budeanu (2007), that gives a comprehensive overview of sustainable tourist behaviour research. The opening statement of her paper is that there seems to be a gap between environmental attitudes and tourist choices. Similarly, other studies point at a gap between behavioural intentions and actual behaviour (e.g. Kollmuss and Agyeman, 2001; Ballantyne and Packer, 2011; Kang et al., 2012). According to several studies reviewed by Budeanu, overall tourists are largely aware of environmental problems caused by tourism and have a positive attitude towards efforts to reduce these. However, only a small share of about 10% of these implements this concern into purchasing decisions, and the majority is reluctant to change their behaviour in support of sustainable goals. Budeanu (2007: 504) concluded that “The low level of tourist engagement in sustainable



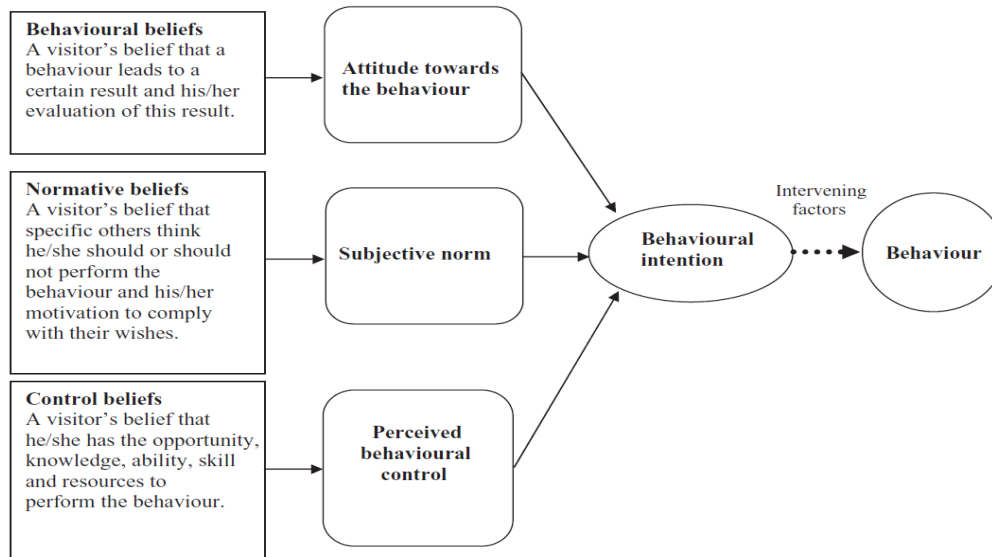
tourism indicates that a good understanding of barriers that prevent tourists from behaving responsibly is still missing.”

Despite this conclusion, Budeanu (op. cit) found some possible explanations for the gap between intentions and behaviour in literature. She made a distinction between internal and external barriers. Internal barriers prevent people from purchasing environmentally friendly products and come from individuals’ lack of knowledge and ability to understand the consequences of their acts and habits. At holiday destinations decisions are mostly automatic, continuing routines from home and replicating daily lifestyles. These “lifestyles have their roots in personal preferences, mostly of hedonic nature, and are hardly countered by environmental arguments” (Budeanu, 2007: 503). Holiday behaviour is also strongly determined by personal safety concerns, motivations, culture and race, and is influenced by surrounding groups.

External barriers are related to the availability of products and services, the convenience to access these, and the belief that one person cannot make a difference. An important limiting factor for tourist choices is also the availability of financial resources. “Choosing the annual holiday is a major event for a household, being one of the most important expenses in a year, involving long-term evaluation of options in terms of price, service quality and time. Given the financial implication of holiday expenses, for the average household this is a rational decision, and altruistic arguments pleading for better attitudes and considerations towards locals and nature may not work. Moreover, inconveniences seem to hinder more environmental actions in the long term, while for short-terms actions, internal barriers, such as habits and lack of resources, prevail” (Budeanu, 2007: 503).

The theory of planned behaviour (TPB) is often used to relate beliefs and attitudes to actual behaviour. It determines three primary types of cognitive structures that determine behavioural decisions. These are attitude towards the behaviour, normative pressure to perform or not perform the behaviour (subjective norm) and perceived self-efficacy (one’s sense of whether he/she is capable of performing the behaviour). A large body of research has demonstrated that these three main theoretical constructs are the result of cognitions based on three corresponding kinds of beliefs: behavioural beliefs, normative beliefs and control beliefs (see Figure 2). According to Brown et al. (2010) a number of extensions to the TPB have been proposed. Of particular relevance to environmental behaviour is the addition of a personal norm variable to account of altruistic behaviour. “Personal norm consists of beliefs that emanate from a person’s sense of what is ‘right’ and ‘morally correct’ to do, a normative influence that is not captured by the subject norm (social pressure) variable in the TPB model. Unlike the subjective norm, the personal norm captures a self-imposed obligation people feel to ‘do the right thing’ irrespective of what other people think” (Brown et al. 2010: 885).

Fig.2 Theory of planned behaviour (source: Brown et al. 2010: 884)



2.1.2 Tourists and environmental friendly attitudes and behaviour

The studies that analyse the relations between attitudes / beliefs (behavioural intention) and behaviour of tourists focus on two main issues: the decision about choosing a sustainable destination (in most cases a hotel, camping or resort with a green label of image) or sustainable behaviour of tourists at their holiday destination. On both subjects, there are very few studies and these studies can be found in a wide variety of journals. The studies also vary in quality, methodology and geography. This makes it difficult to draw general conclusions. Also, the studies differ in segmentation of their response groups. In some studies, there is no segmentation whatsoever, while in others it is very basic such as in age (groups) and gender. Lifestyle is sometimes operationalised by using sustainability attitude (or behaviour) and less so to more general attributes of lifestyle. If a difference is made between socio-economic factors, age and gender, the results are in harmony with the before mentioned conclusions by Loenidou et al. (2015).

Choosing a sustainable destination

Most research on choosing a sustainable or environmentally friendly destination are about choosing accommodation. Some research has been done about choosing green or environmentally friendly hotels. In their review article on environmentally related research, Mueng et al. (2012) found some studies which concluded that overall a green hotel's image affects the visit intention, but also studies that hotels were chosen more because of price, service quality and physical attractiveness rather than environmental attributes (see also Budeanu, 2007). Also, according to Mohd Noor et al. (2014: 25) "our knowledge about tourist intention to choose green hotels appears to be inconsistent and inconclusive". A general assumption about tourists that choose to stay in environmentally friendly accommodations is that the impact associated to their stay is automatically lower. According to Budeanu (2007: 503) this is not always true because "...once people know they are using an environmentally friendly device, they tend to use it longer, and end up by consuming more resources, phenomenon known as the rebound effect." It seems to us (TUD) that choosing a sustainable destination is of less importance to Urban Waste. So we did not elaborate on this.



Behaviour at the holiday destination

In general, people behave differently when they are on holiday, from how they behave at home. The environmental behaviour of tourists is largely influenced by habit, practicalities, general knowledge, and awareness of issues, coupled with other priorities in life as well as the purpose of the holiday and travel motivations (see Miller et al., 2015). According to Kim and McKercher (2011) people, while on holiday, join a temporary 'tourist culture' that encourages alternative behaviour which is associated with a relaxation of domestic social norms while on holiday. Therefore, tourist behaviour represents a combination of national and tourist cultures.

A few studies look specifically at environmental behaviour of tourists at their holiday destination in relation to their environmental behaviour at home (see for instance: Dolnicar and Grün, 2009; Barr, et al., 2011; Miao and Wei, 2013; Miller, et al., 2015; Bob, 2016). The general conclusion of these studies is that tourists behave differently at their holiday destination than at home: at home they behave more environmentally friendly than at their holiday destination. Interestingly Barr et al. (2011) found that tourists with high levels of commitment to 'environmentally-responsible behaviour' at home tend to reduce this commitment significantly in a vacation setting. The reduction for tourists with lower levels of commitment are far less. Another curious finding was made by Lee and Moscardo (2005) who investigated guests of an Australian eco-tourism resort. Even though these guests have high levels of environmental concern, not all of them participated in the environmental practices at the resort. A main reason for not participating was a lack of awareness, which is curious when having chosen a destination which an ecotourism accreditation.

Most studies do not deal with waste separately, but investigate environmentally friendly behaviour in general and include for instance public transport usage, usage of bath towels in hotels, consumption of organic food, avoiding buying goods with unnecessary packaging, etc.. In some studies, it is possible to look closer at aspects of waste behaviour. Miller et al. (2015) for instance looked at recycling behaviour of visitors to Melbourne, Australia. They concluded that, although paper and plastic recycling were frequently done in both the domestic and tourist context, a recycling drop of 16% was observed which was higher than other pro-environmental behaviours such as green transport use, energy use and green consumption. An explanation suggested by Miller et al. (2015:39) is "that recycling behaviour is institutionalised in the home city, with a convenient, regular, and tightly controlled waste and recycling pick-up service. Therefore, the household exerts minimal cognitive effort in the home city, just fitting in with a house-to-house pre-scheduled service. The same household in a mass tourism destination has no scheduled system and that leaves the household members to their own devices, experiencing moderate rather than high habit carry-over".

A study by Bob (2016) makes it possible to look closer at the recycling of waste. Surprisingly in this study among beach tourists in Durban, South Africa, it was found that a larger share of the respondents was engaged with recycling as a tourist than at home (68% vs. 55%). A possible explanation is that, according to Bob (2016: 9), "some of the respondents stated that recycling while travelling was easier since at the accommodation establishments guests are usually encouraged to separate their waste since bins were provided to do so." This observation is in harmony with a more general conclusion by Dolnicar and Grün (2009) that one of the reasons why tourists behave less environmentally friendly than they do at home, is the lack of infrastructure which makes it impossible to behave in the same way during their holiday as at home. It seems that convenience to continue the home behaviour is important (Miller, et al., 2015).



Apart from this explanation in the literature a few other (possible) explanations for the differences in environmental friendly behaviour at home and on holiday were found:

- One of these explanations is related to the before mentioned 'tourist culture'. Dolnicar and Grün (2009: 708) wrote "...that a vacation is a break from everything, where one wants to be selfish and not worry about being responsible." Tourists do not seem to practise the same responsibility for the environment in a holiday destination as at home. Probably they feel morally obligated in their own communities (Miller et al., 2015).
- Yet another possible explanation was brought up by Dolnicar et al. (2008) who found in their literature review about environment-friendly tourists that regional identity plays a major role in environmental behaviour". According to these authors (p. 205) "The tourism implications of these findings essentially put forward the hypothesis that environment-friendly behaviour will decrease with lower levels of regional identification by tourists. It is likely that identification levels are low in the tourism context in general, particularly when destinations are visited for the first time."
- Dolnicar et al. (2008) point to the argument that a strong trade-off exists between the sacrifice of comfort and environmentally sound behaviour. This trade-off is likely to be perceived as stronger in the tourism context, which is fundamentally about pleasure and not sacrifice. This trade-off is also shown in some studies about the usage of green hotels. Although, in general there seems to be a willingness to pay for green hotels, some studies found a low willingness in practice. In these cases, guests are willing to accept only a slightly lower level of hotel performance or to only accept some inconveniences in green hotels when prices are comparable to convenient non-green hotels (see: Myung et al. 2012: 1272). Miao and Wei (2013) conclude that the driving forces of consumers' pro-environmental behaviour when visiting an hotel are related to improvement of personal enjoyment and comfort.

Some studies investigate the differences in eco- or environmental-friendly attitude and/or behaviour between tourists from different countries of origin (Hudson and Ritchie, 2001; Kang and Moscardo, 2006; Kvasoca, 2011; Leonidou et al., 2015). Investigating tourists from different countries can be seen as a proxy for investigating the influence of different cultures on eco- or environmental-friendly behaviour. Kvasova (2011) for instance looked at differences in eco-friendly attitudes and behaviour of Swedish and Russian tourists in Cyprus. She founds no statistically significant differences between these nationalities concerning their eco-friendly attitudes, although the Swedish group had a slightly higher average score. However, the Swedish group showed a notably higher average score than the Russians in terms of eco-friendly behaviour. A t-test revealed statistical significant differences between the two nationalities. Unfortunately, Kvasova did not test sufficiently whether other characteristics of her sample influenced the differences between the nationalities.

In contrast to Kvasova (2011), Leonidou et al. (2015) found that there are differences in eco-friendly attitudes between tourists from different nationalities. They found that tourists from Western European countries were more environmentally friendly in their attitudes than Eastern Europeans. A possible explanation for these national/cultural differences is given by Leonidou et al. (2015: 645). They state that Western European countries have stricter environmental laws, more powerful environmental pressure groups and a better established green culture, all of which positively influence their citizens' environmental thinking and actions. Another possible explanation can be found in the so called 'post-materialism hypothesis' which states Western and Eastern Europeans have gone through different evolutionary processes. "...as society moves toward widespread material goods, the values of these are decreasing while post-material values are increasing. Thus, the greater economic development of Western European countries might have led to a wider spread of post-material values in these societies, one of which is environmental concern. Conversely, less economically developed Eastern European



countries are still dominated by materialistic values (e.g., security, safety), which might have resulted in lower levels of pro-environmental attitudes.” (Leonidou et al. 2015: 645-646).

3. Customized questionnaire / methods

Questionnaires have been developed according to the above mentioned literature review and based on the suggestions of all the partner of URBANWASTE, including the pilot cases. The Gender Auditor also double checked those in order to guarantee that relevant information concerning gender issues were appropriately considered. The three surveys have been developed in English and then translated in the 6 languages of pilot cases (IT, FR, HR, ES, PT, EL). The survey directed to the tourists has been also translated into German. The surveys were made available through the EU survey platform at the following links:

<https://ec.europa.eu/eusurvey/runner/URBANWASTE-Tourism-workers>

<https://ec.europa.eu/eusurvey/runner/URBANWASTE-Waste-Management-Workers>

<https://ec.europa.eu/eusurvey/runner/URBANWASTE-Tourist>

3.1 Tourism industry staff

The survey developed for the operators of the tourism industry mainly aimed at understanding how relevant they consider tourism in the city which they worked. In this case, each survey was disseminated among hotels, restaurants, hospitality industry, tourists' operator, airport, etc. of the pilots involved in URBANWASTE. Each pilot aimed at collecting at 50 surveys, but not all the pilots succeed to reach this target within the timeframe of this deliverable. Questions were referring to the importance of tourism in terms of waste production and management, to the degree of relevance given to individual behaviours and to concrete actions to implement to reduce the impact of tourism on waste production and management. Tourism workers have also been asked regarding tourists' preferences in the choice of accommodation and on the relative importance of ecosystem services – for this please refer to Del 2.6. The complete survey can be found in Annex I.

3.2 Waste Management Staff

A similar composition is reflected in the survey developed for the waste management staff. Through the questions developed we mainly aimed at understanding how relevant the waste workers consider the impact of tourism on waste production in their cities. Before that waste workers have been asked on their perception of the waste management system of the pilots in which they work, and how they think this system could improve. This information will be then communicated to the pilots, in order to take in consideration their view in future strategies and planning. Moreover, a part of the survey was focused on the connection of behaviour and waste production. This survey was distributed among workers of several sector of the waste value chain, such as local authorities, SME, private company, researchers, etc. As for the survey for the tourism operators the target of



replies was set at 50 respondents per each pilot; nevertheless, also in this case some pilots couldn't accomplish the target in the established timeframe.

The complete survey can be found in Annex II.

3.3 Tourists

The questionnaire oriented to the tourists aimed at gaining a better understanding on the relation between tourism and waste production and management. In particular, the survey asked to tourists among the 11 pilot cases the relation between their behaviour at home and on holidays. Starting from the existing literature that tends to confirm this theory, URBANWASTE's scope is to find out if people's behaviours change while travelling. For this reason, tourists have been asked about their behaviours regarding waste production and management, their perception regarding the waste management of the pilots visited and which actions they would consider more effective to address a behavioural change. At last, the questionnaire aims at identifying which rewards for good behaviour would be the most relished by tourists. In this sense, the pilots can use this information to tailor the rewards they will include in the WasteApp. Pilots chose different strategies to disseminate the surveys: some of them subcontracted a specialized company to cross tourists at the airport, some others hired students to catch tourists around the pilots, and some other disseminated those through hotels and restaurants. Unfortunately, mostly due to the low tourist season -November and December- at the time of surveys' distribution, not all the pilots reached the foreseen target (50 replies).

In this case partners agreed to have a second round of this survey during next spring, to collect more results and to perform a deeper and more detailed analysis of this data. The complete survey can be found in Annex II.



4. Survey results and first analysis

4.1 Overview on general results

Figure 3: Responses per city and survey (Less than 10 respondents per city and survey are highlighted in the graph)

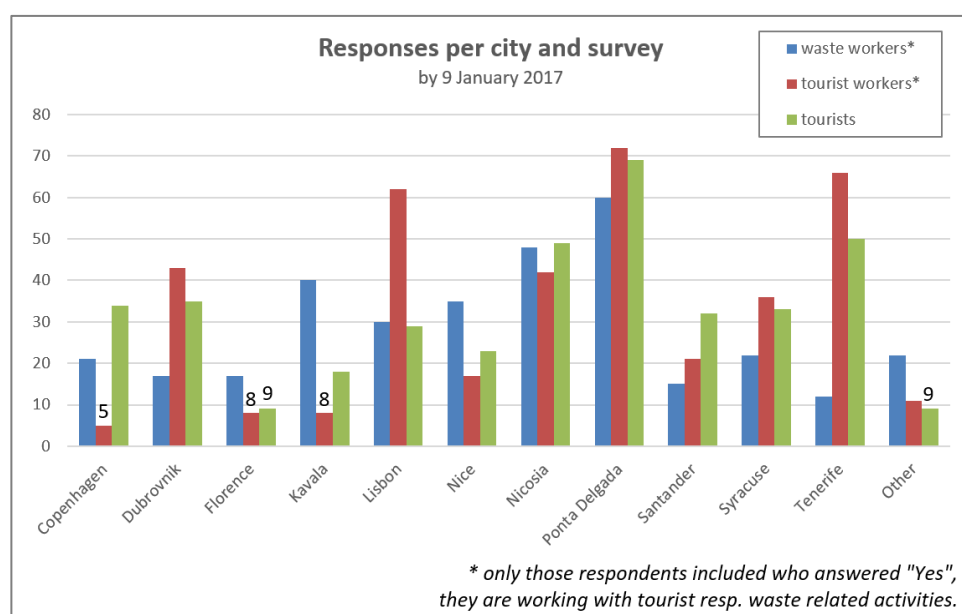
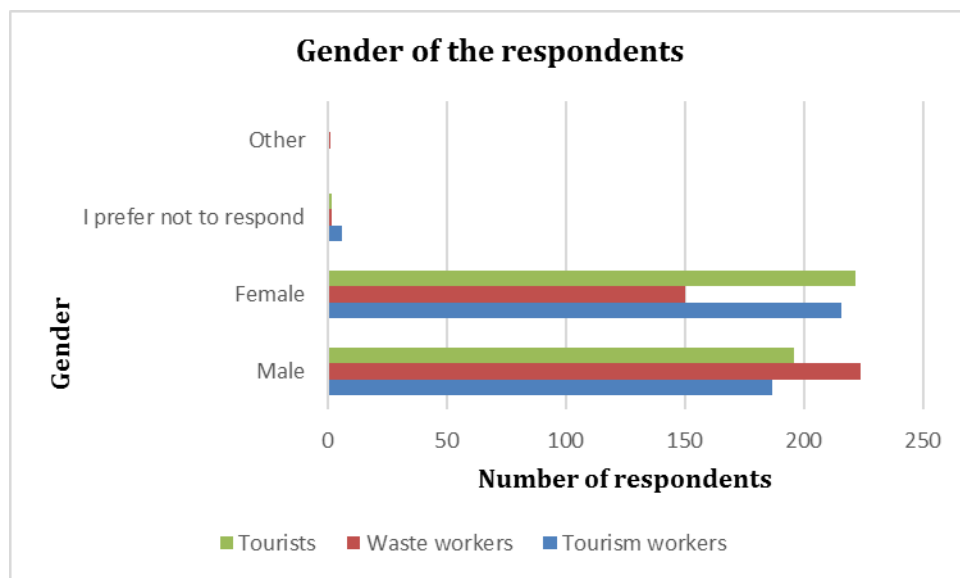




Figure 4: Gender of the respondents



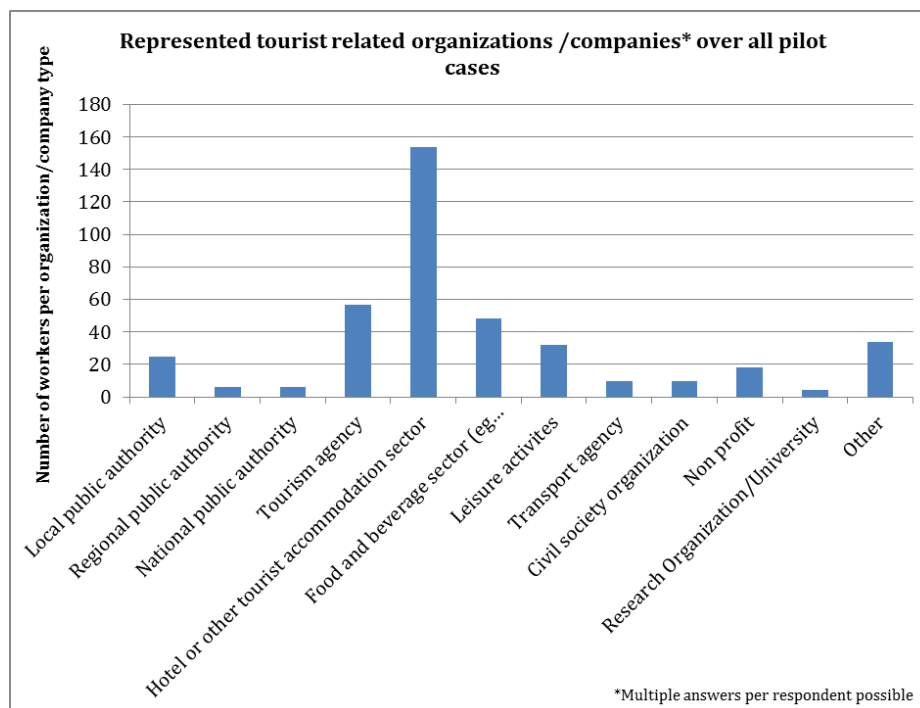
Every attempt was made to recruit gender balanced samples of respondents, although parity has not been achieved, and this must be seen in the context of difficulties in recruiting respondents. The largest gender gap is, unsurprisingly, in the waste worker sector, which tends to be male dominated across Europe (see Section 3.3 below).

4.1.1 Tourism industry staff

Regarding the composition of the surveyed tourism industry staff (see Figure 5) most of the respondents are from the hotel or accommodation sector, tourism agencies, food and beverage sector and leisure activities.



Figure 5: Represented tourist related organizations /companies over all pilot cases



Regarding their job role, in almost all pilot cases more than 25% of the surveyed staff was President/Director or Manager. Otherwise administrative staff and technicians form a big part. Regarding Copenhagen, we have to consider a very low participation of tourist workers in the survey.



Figure 6: Job role of respondents from tourism industry per pilot case

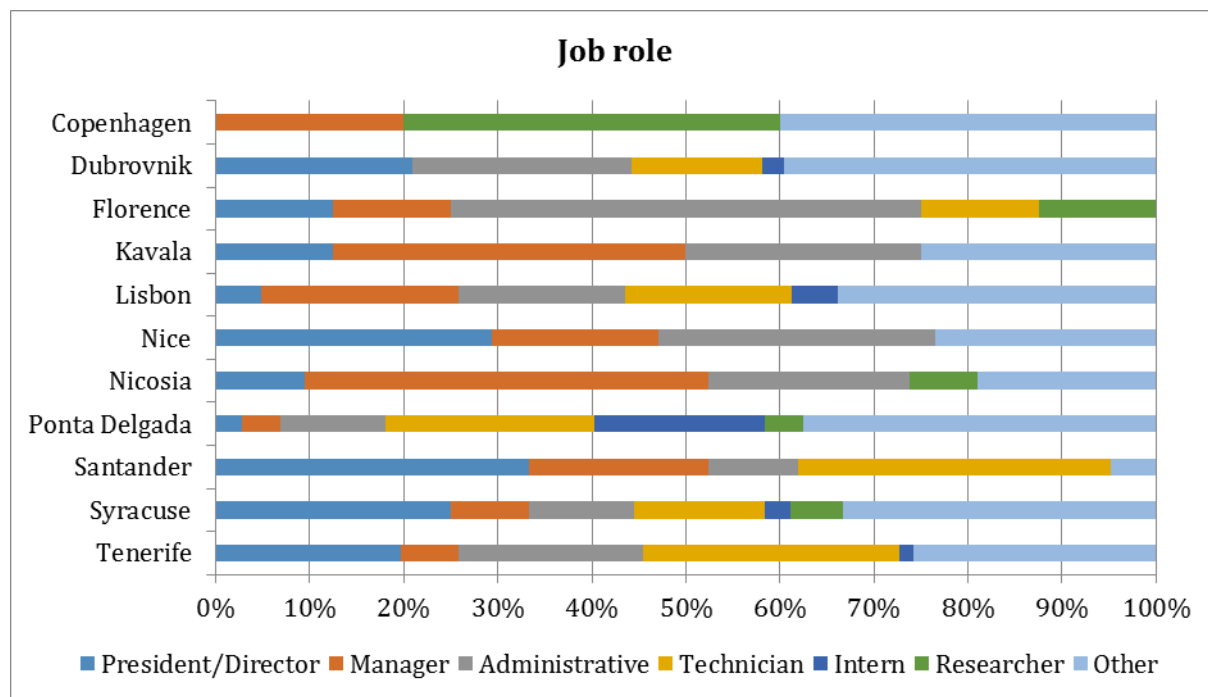


Figure 7: Gender distribution of respondents from tourism industry per pilot case

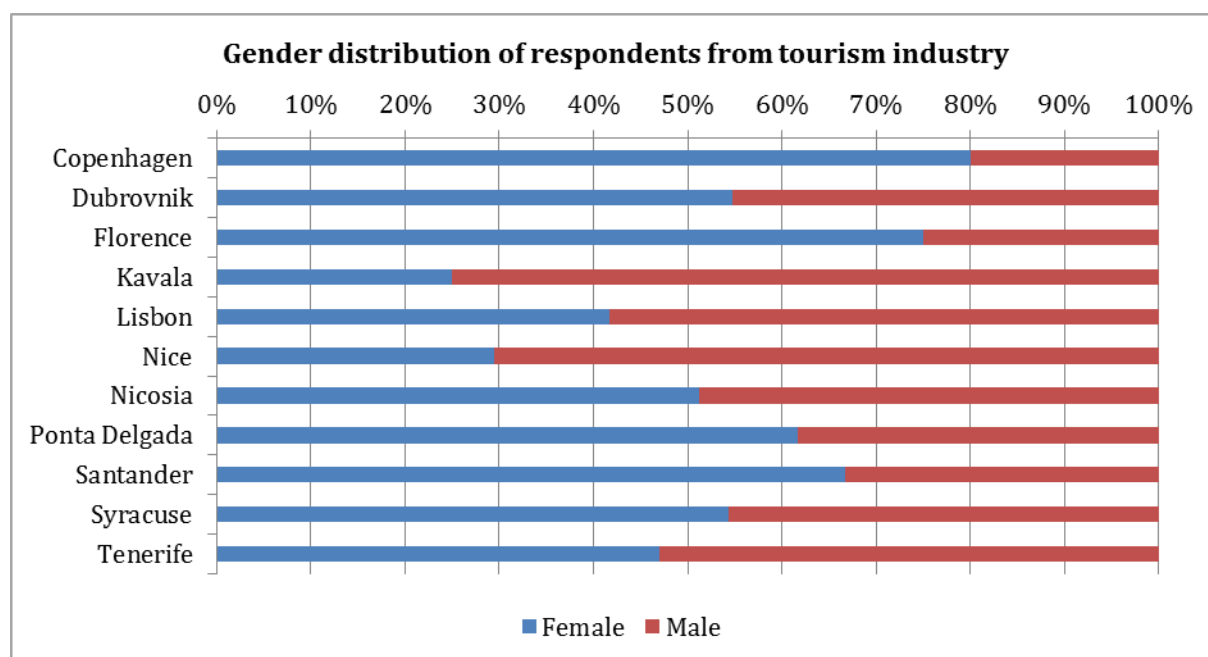
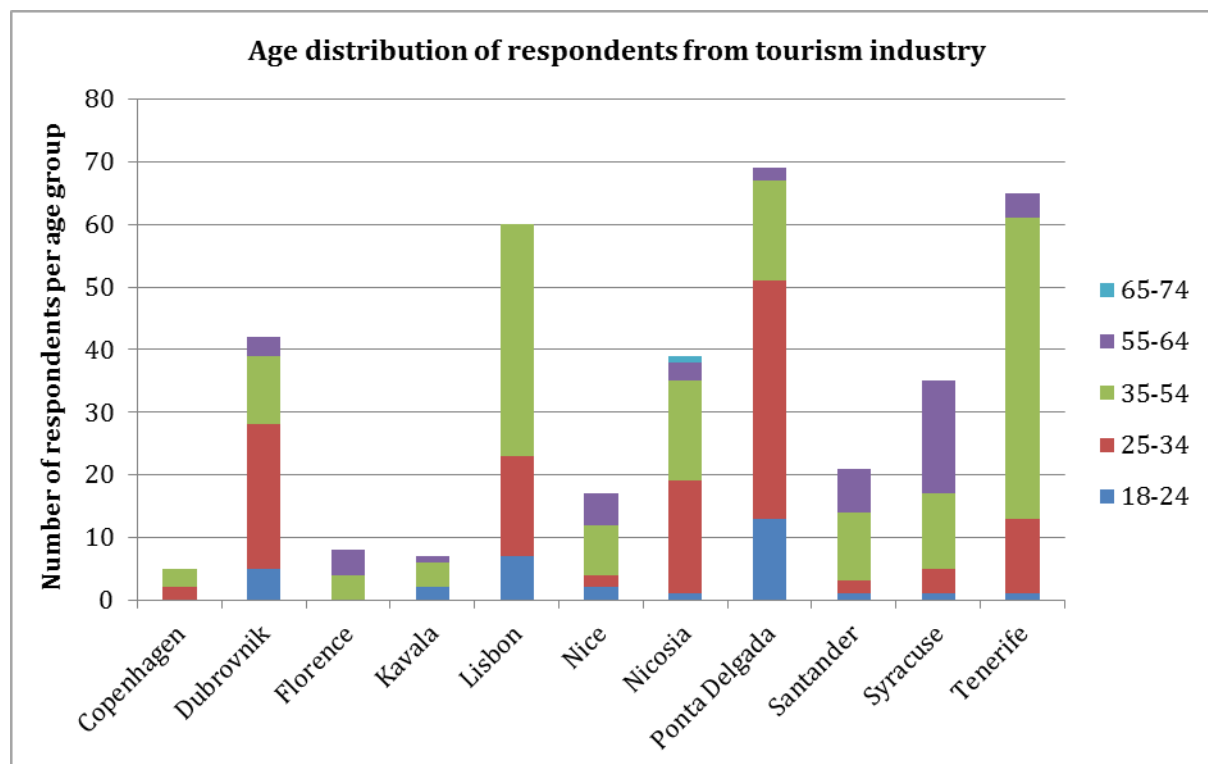




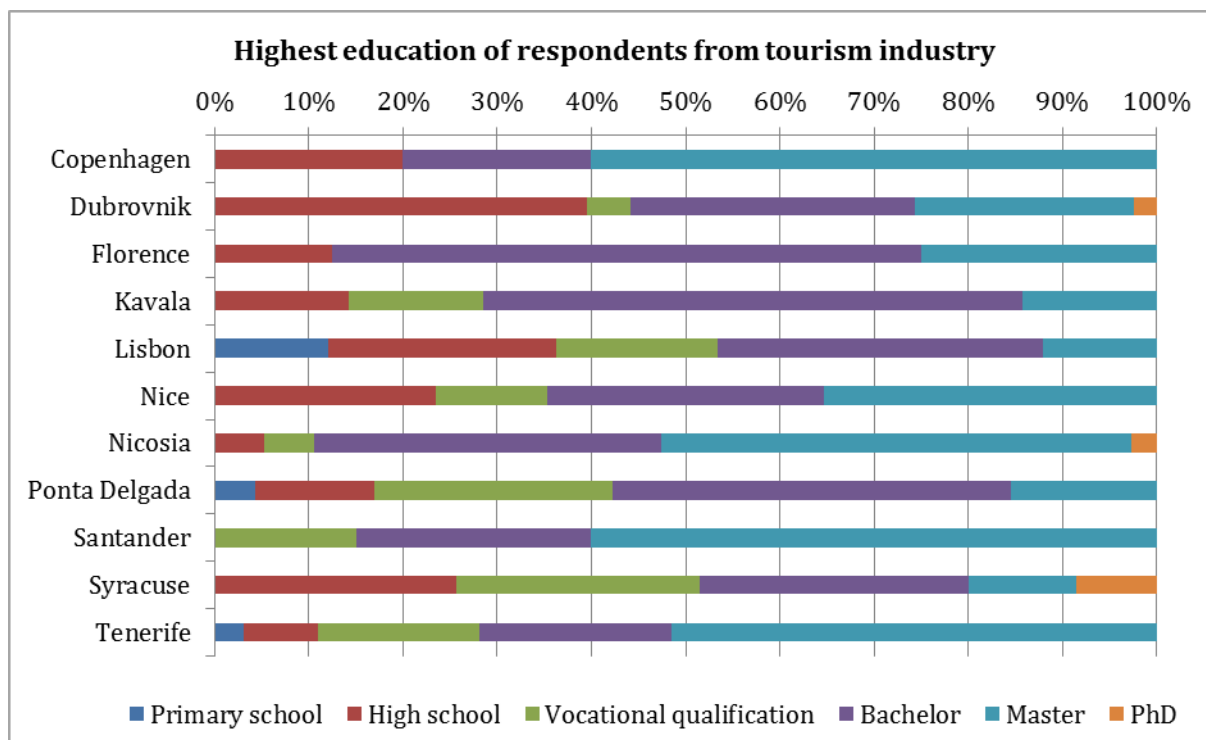
Figure 8: Age distribution of respondents from tourism industry per pilot case



Regarding the gender and age distribution of the participating staff, we have a more or less, equal share of male and female staff that participated (except, again, Copenhagen), although as Section 3.3 will show, male and female participants work in different positions. Regarding age, however, we can see that in some pilot cases, e.g. in Lisbon, Ponta Delgada, Dubrovnik or Tenerife, the average age of the participants is remarkably lower than in the other pilot cases.



Figure 9: Highest education of respondents from tourism industry per pilot case



As different as the age distribution is also the distribution in terms of highest education of the participants : Some pilot cases, such as Nicosia, Kavala, Tenerife, Santander or Florence show a very high share (>30%) of staff with at least a Bachelor education.

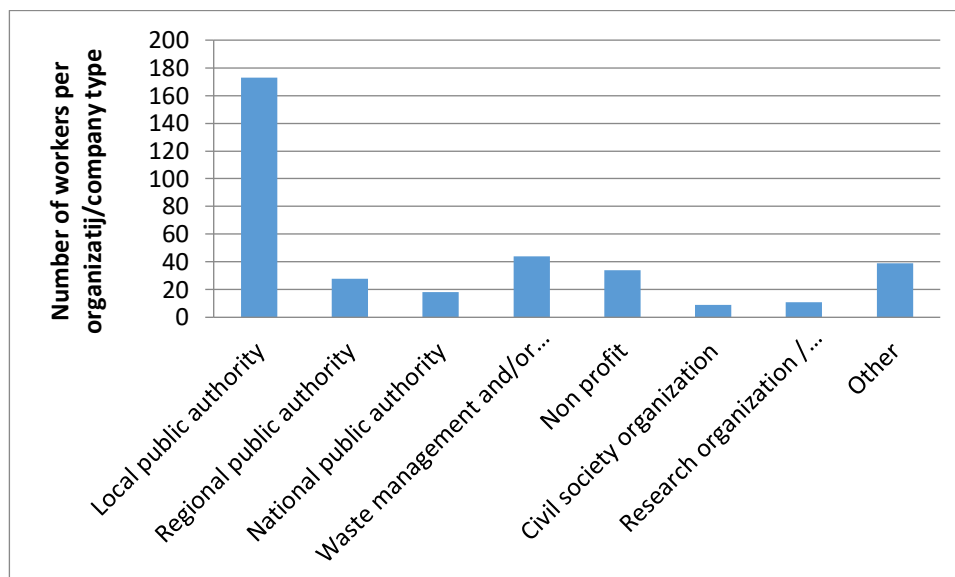
Regarding the country of residence of the tourist workers the surveys shows that – besides few exceptions – the workers are residents of the country in which the survey was taken, therefore these numbers are not separately presented in a figure.

4.1.2 Waste Management staff

In total 375 respondents filled in the survey. Of them 339 (90%) is working on any kind of waste-related activities. The analysis is only done with these 339 respondents.



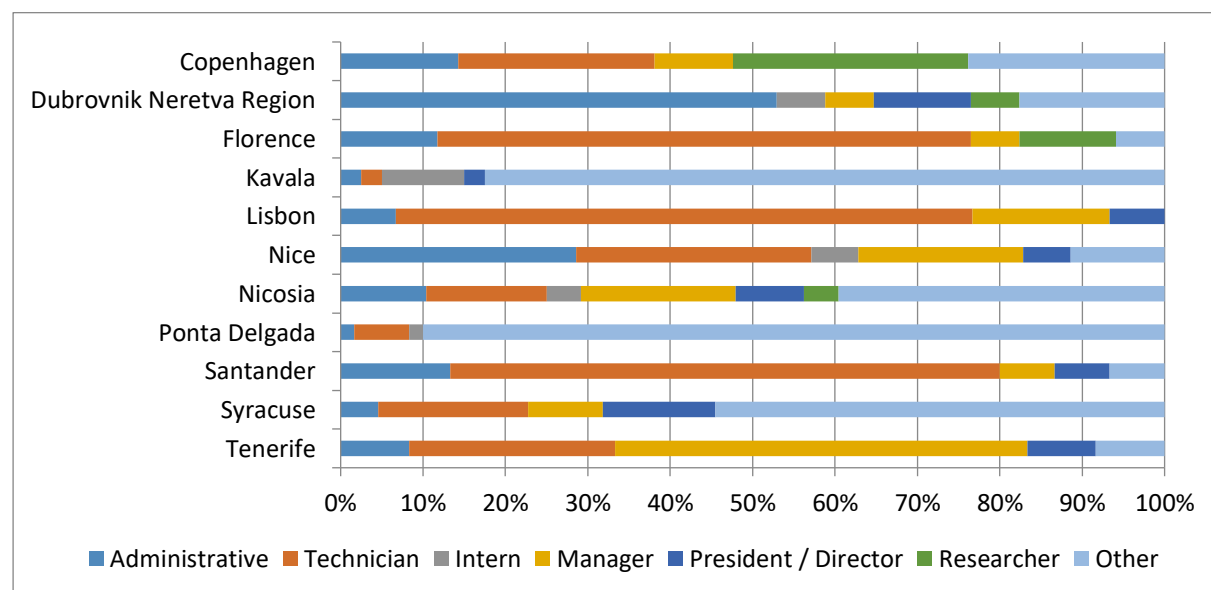
Figure 10: Represented waste related organizations /companies over all pilot cases*



*Multiple answers per respondent possible: 16 respondents work at more than one type of employer

51% of all respondents work at local public authorities. The other 49% is divided among the other 7 organization/company types. The share of workers at local public authorities shows large differences between the pilot cases. This may reflect institutional differences (how is waste management organized) and/or the way the survey has been distributed.

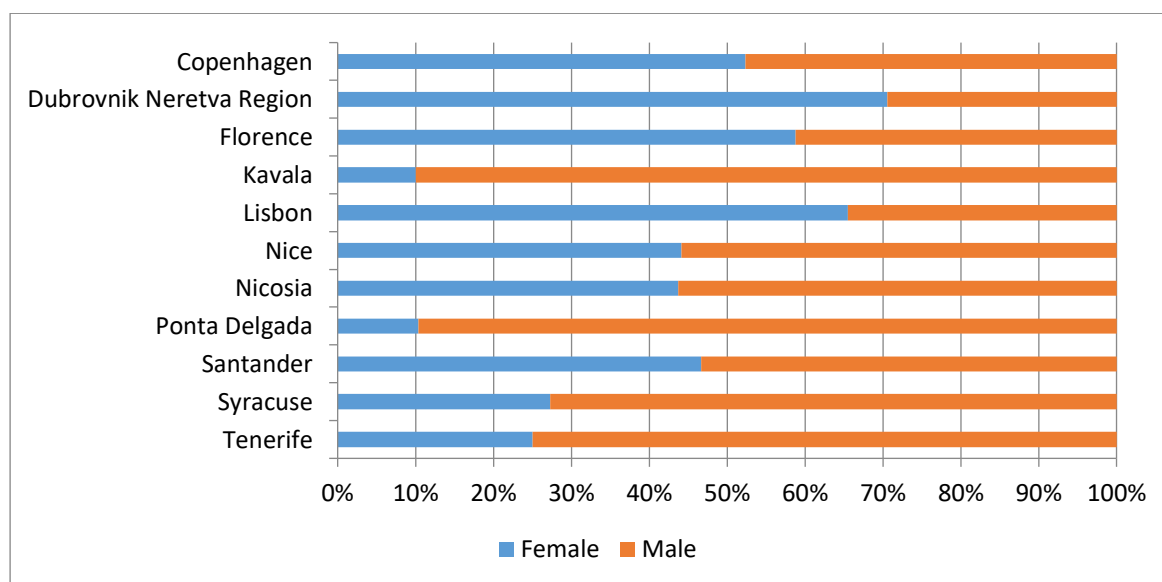
Figure 11: Job role of respondents in waste related organizations /companies per cases





There are large differences in the distribution of job roles between the various pilot cases (see figure 8). Remarkable is the high share of 'other' job roles in Ponta Delgada (90%), Kavala (83%) and Syracuse (55%), whereas is the whole survey this is 39%. Also, remarkable is the high share of technician jobs in Lisbon (70%), Santander (67%) and Florence (65%), high shares of administrative staff in Dubrovnik Neretva (53%) and manager staff in Tenerife (50%). These differences may reflect institutional differences (how is waste management organized) and/or the way the survey has been distributed.

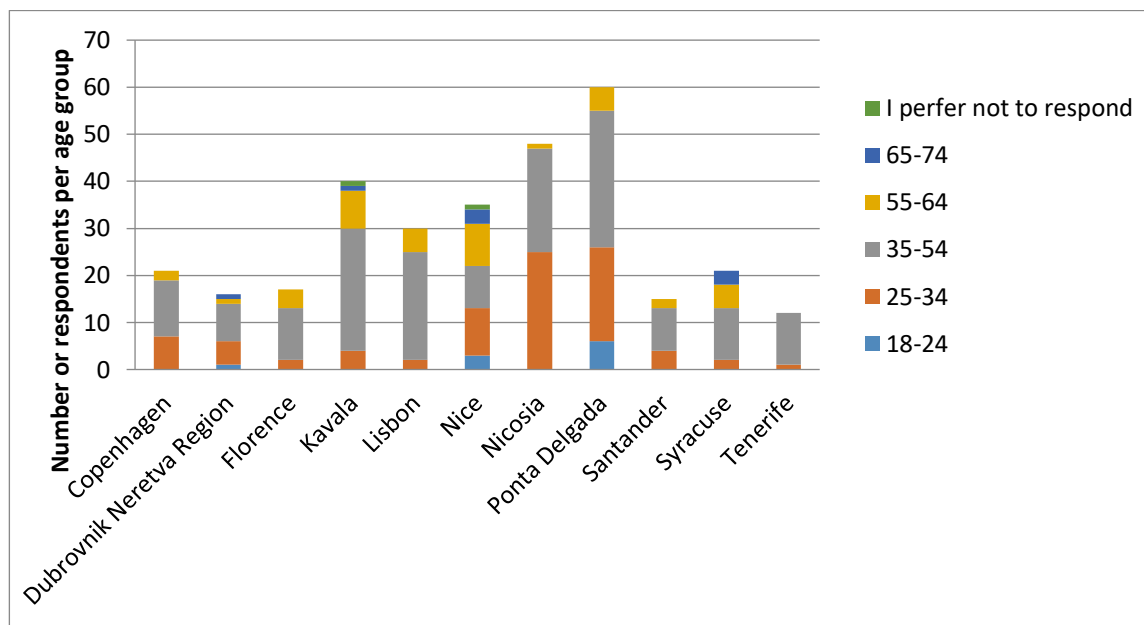
Figure 12: Gender distribution of respondents from waste management workers per pilot case.



62% of the respondents are male. Nevertheless, in some pilot cases the majority of respondents is female. This applies to Copenhagen, Dubrovnik, Florence and Lisbon. See Section 3.3 for further detail.

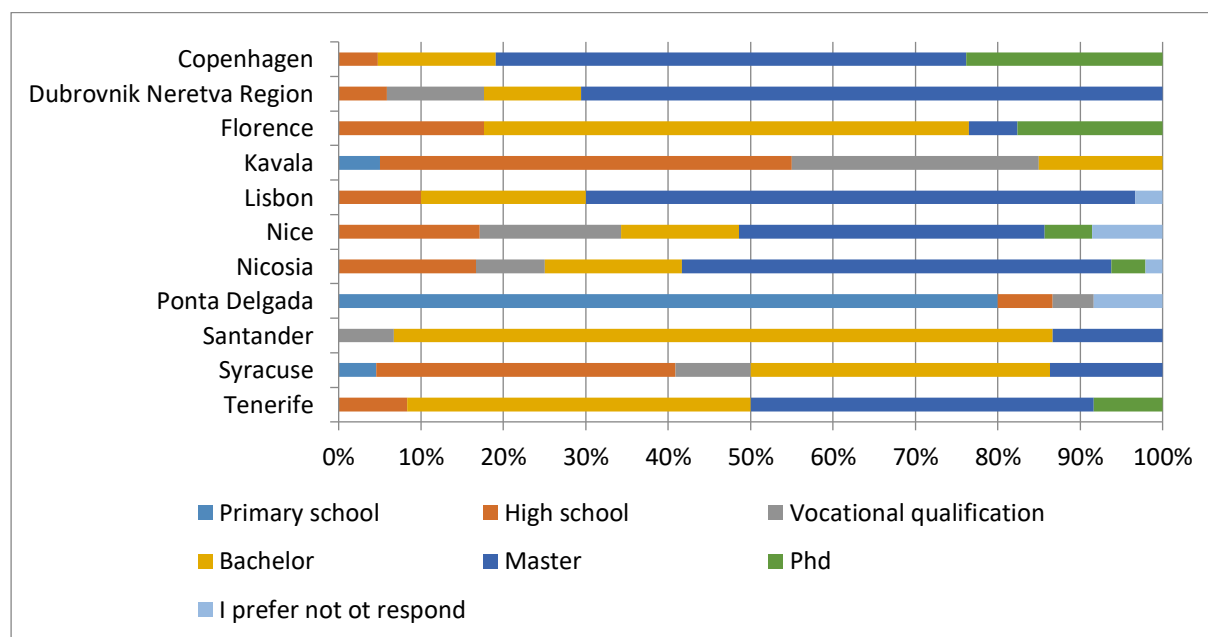


Figure 13: Age distribution of respondents' from waste related organizations /companies per pilot cases



In total 55% of the respondents is between 35 and 54 years of age. In all pilot cases (except Nice) this age group is the largest group.

Figure 14: Highest education of respondents from waste related organizations /companies per pilot cases.





In general, the respondents have a rather high level of education (see figure 14). In all pilot cases (except Kavala) 50% or more of the respondents have a bachelor, master or PhD education level.

Regarding the country of residence of the waste workers the surveys shows that – besides few exceptions – the workers are residents of the country in which the survey was taken, therefore these numbers are not separately presented in a figure.

4.1.3 Tourists

In total, 391 tourists answered the survey before the 15th of January, when the analysis of the results started. Additional replies came the following days, and these will be taken into account in the second round of analysis that will take place during M10 and 11 of the project implementation. Within that phase additional analysis on the cultural, educational and family status background will be performed.

Figure 15: Tourists' gender distribution

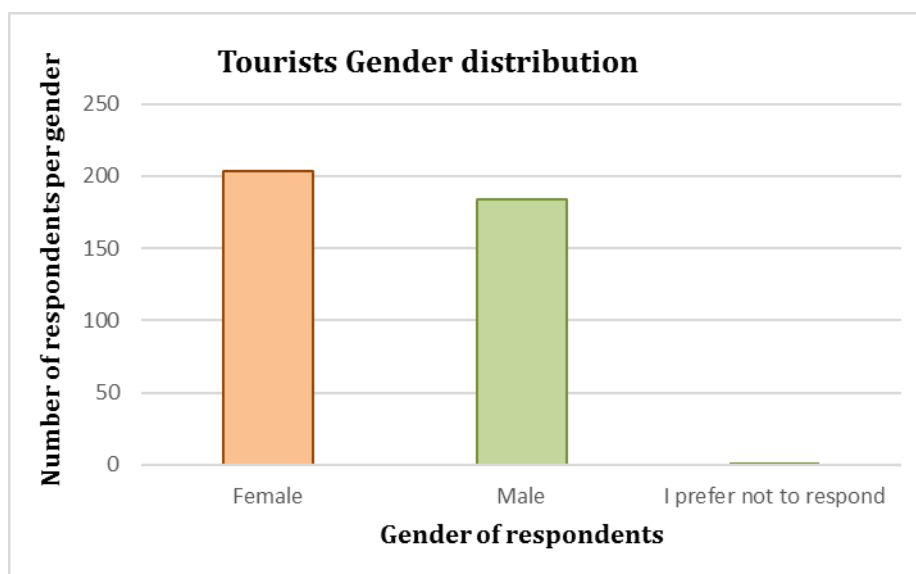


Figure 16: Tourists' age distribution

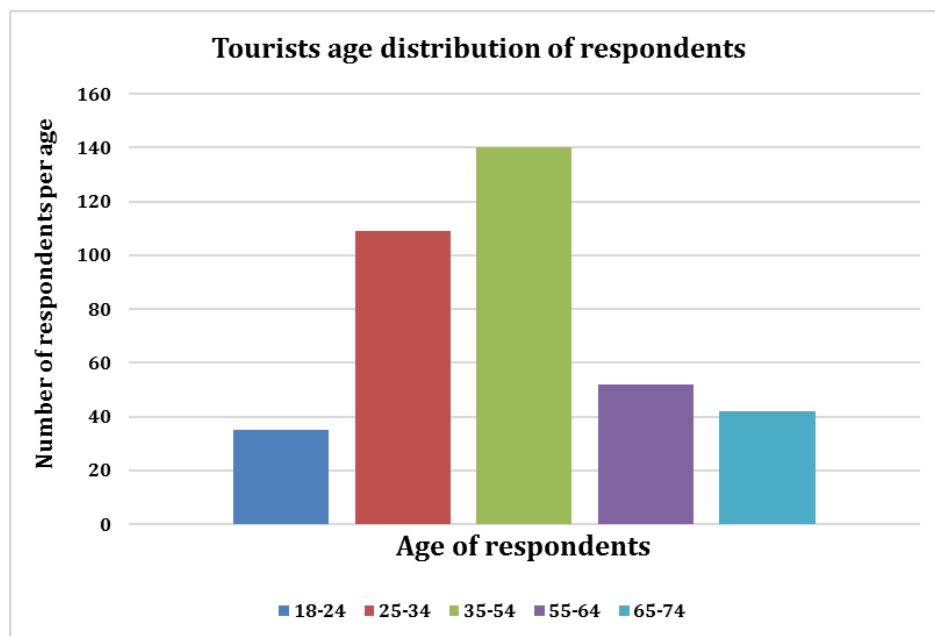


Figure 17 Tourists' pilot visited

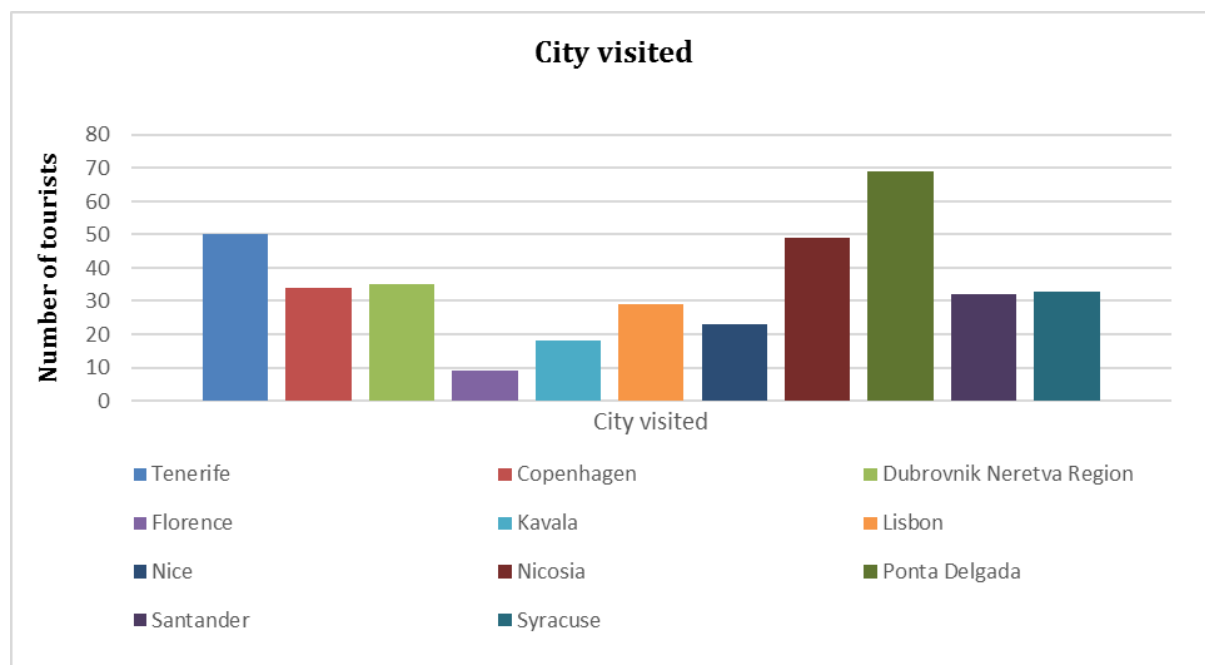
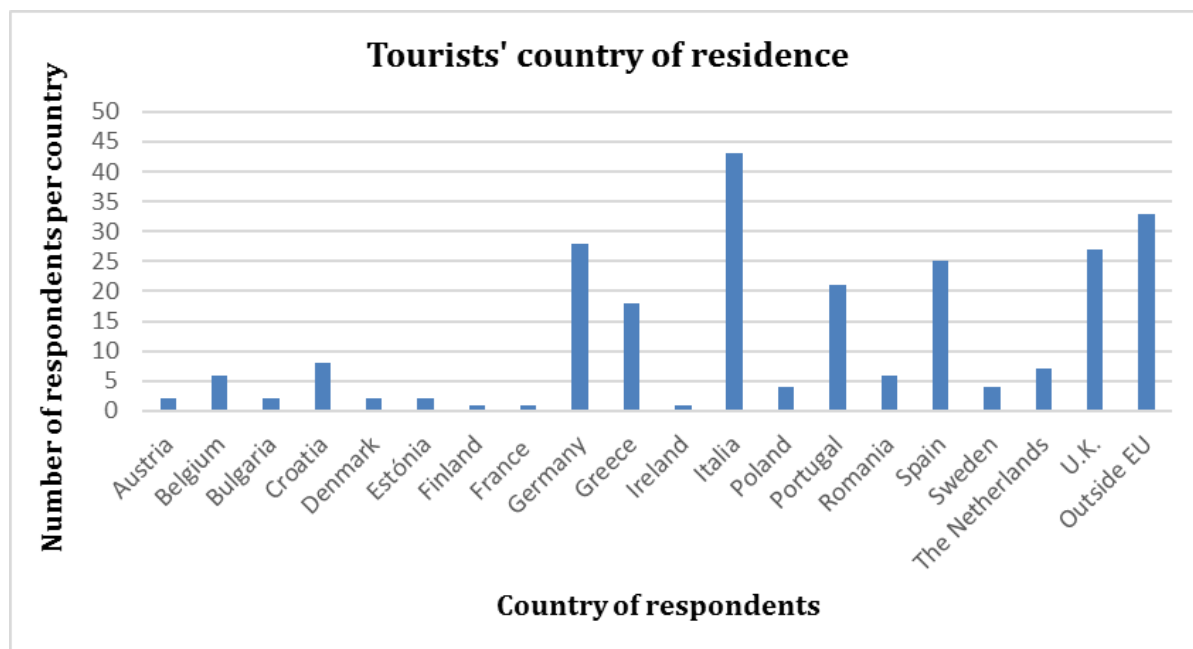
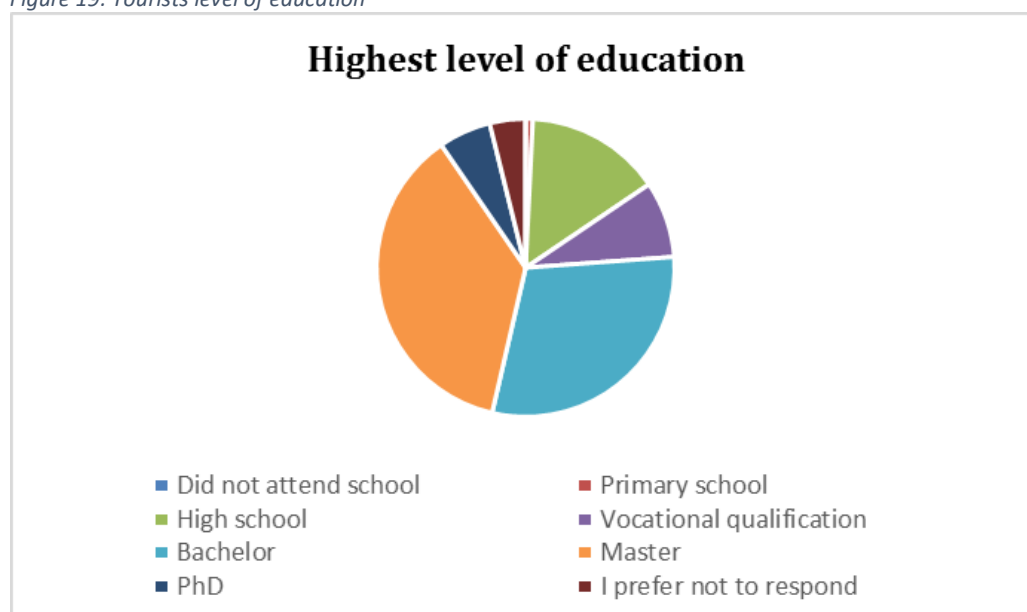


Figure 18: Tourists' Country of residence



Most of the replies came from EU citizens, with an important share of replies from Italy, Spain, Germany and UK. Tourists coming from 19 out of 28 EU Countries have replied to the survey and a significant share of respondents- around 10%- is resident in Countries outside from the EU. Within this category an important share of US, Chinese, and Canadians.

Figure 19: Tourists level of education





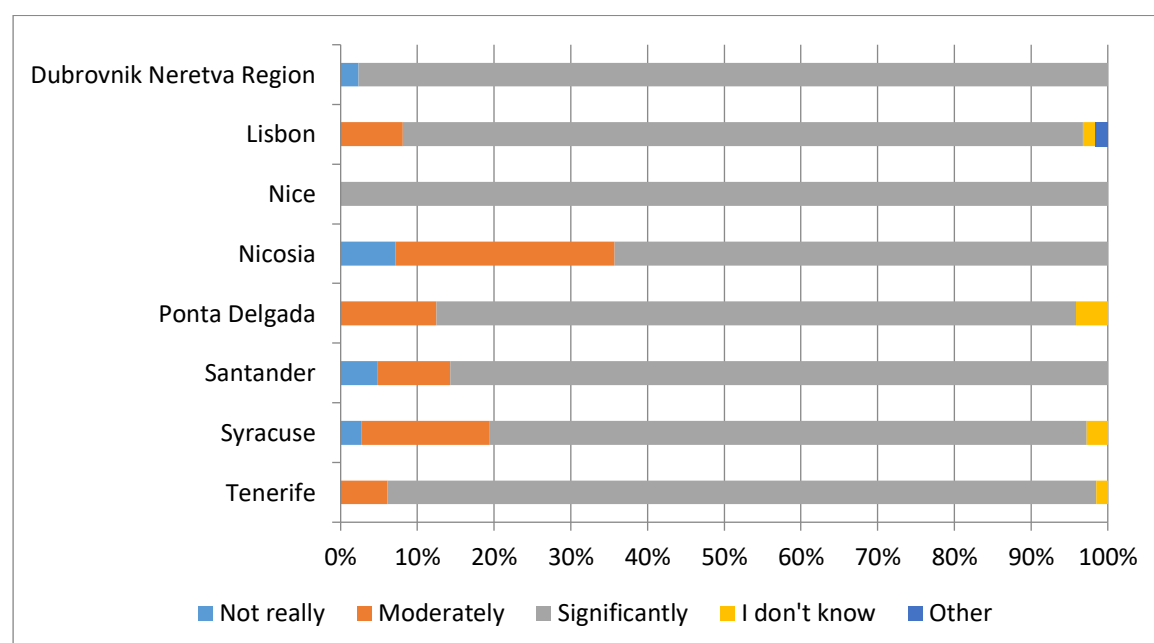
4.2 Comparative analysis of survey questions between surveyed groups

4.2.1 Relation tourism and waste

In this section, we present the survey results on the relation between tourism and waste production and management. Particularly in the waste workers and tourist workers surveys several questions were dedicated to this subject. We will first deal with issues related to waste production.

Waste production and tourism

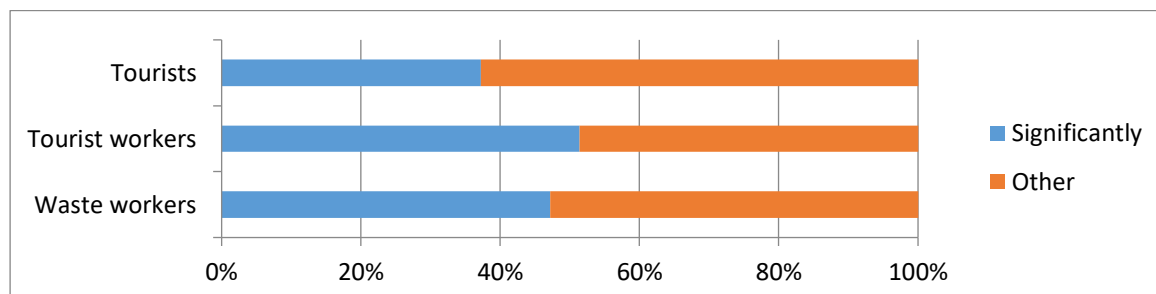
Figure 20: How tourist workers assess the contribution of tourism to the city/regional economy?*



* Copenhagen, Florence and Kavala are not included in the graph because a low response rate (less than 10 respondents).

An issue that is closely related to the waste produced by tourism is the significance of tourism for the local economy. We asked the tourist workers how they assess the contribution of tourism to the local economy. Figure 20 shows that the majority of tourist workers states that tourism contributes significantly to the local economy in their city or region.

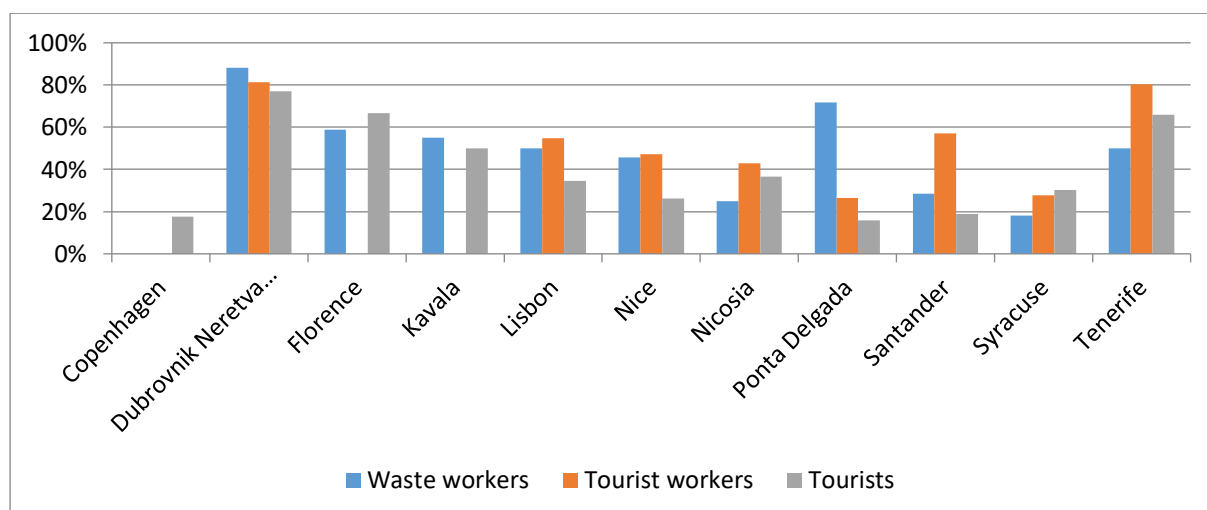
Figure 21: Share of respondents believing that tourism affects waste production "significantly"*



*In waste workers survey a different scale is used (answer "Partially" only used in the waste workers survey).

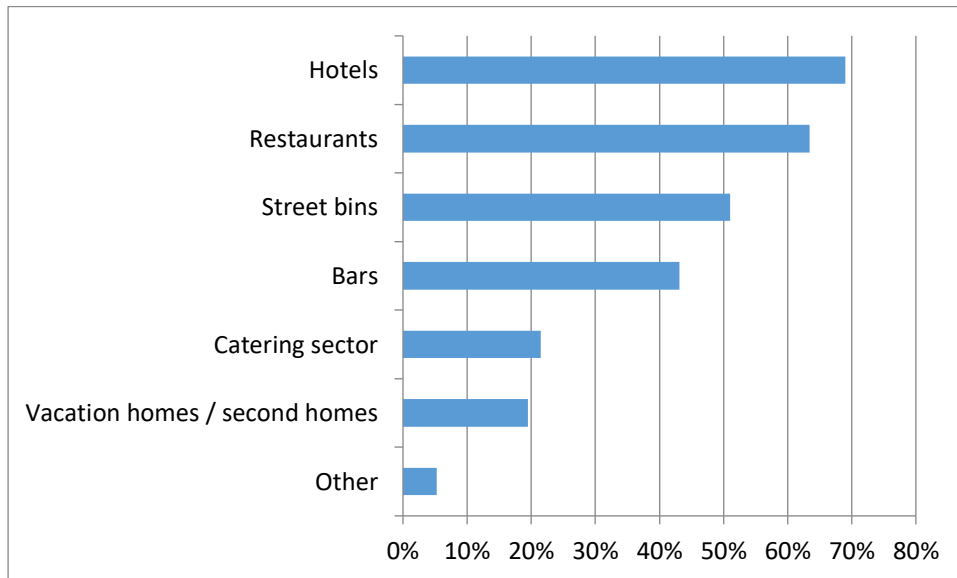
In all three surveys, the respondents were asked about their belief in the effect of tourism on waste production. 51% of tourist workers surveyed believe that tourism affects waste production significantly. With the waste workers, this is 47%. Among the tourists, 'only' 37% believe that tourism affects waste production significantly (see figure 21). This implies that in general tourists have a slightly different perception of the waste produced by tourism than tourist workers and waste workers. When we look at the responses to this question per case city/region (see figure 22), then some differences appear. First of all, the figure clearly shows that in Dubrovnik in all three groups of respondents a relative high share believe that tourism affects waste production significantly. The opposite is the case in Syracuse where a small share of the respondents believe that tourism affects waste production significantly.

Figure 22: Share of waste workers, tourist workers and tourists which believing that tourism affects waste production "significantly" by case city/region*



*If no bar is shown, the response rate was low (less than 10 respondents).

Figure 23: Main sources of waste production depending on tourism according to the waste workers.*

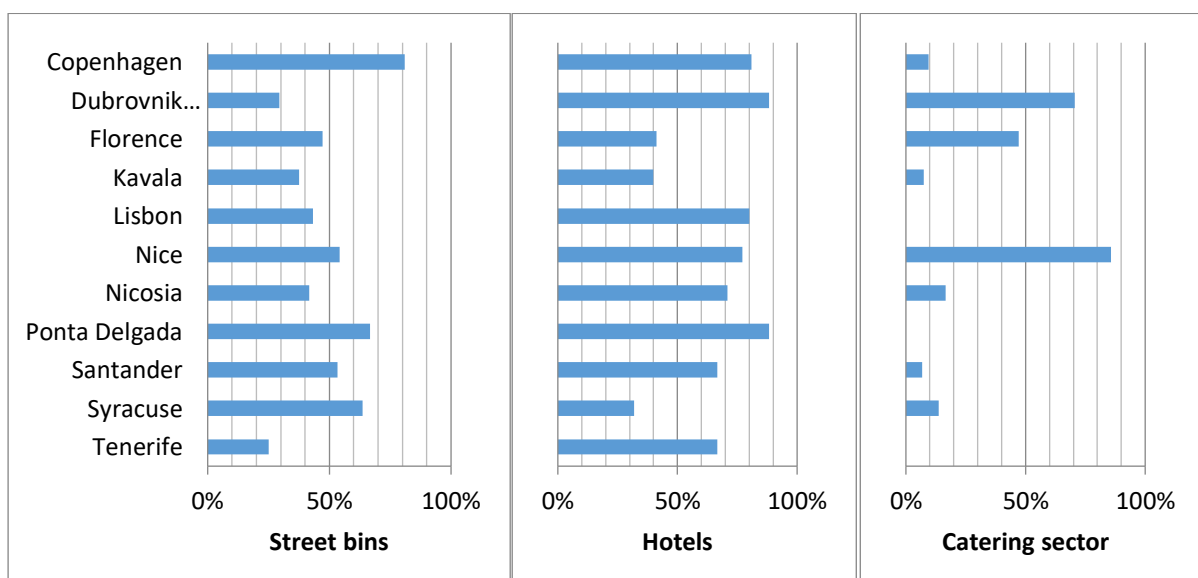


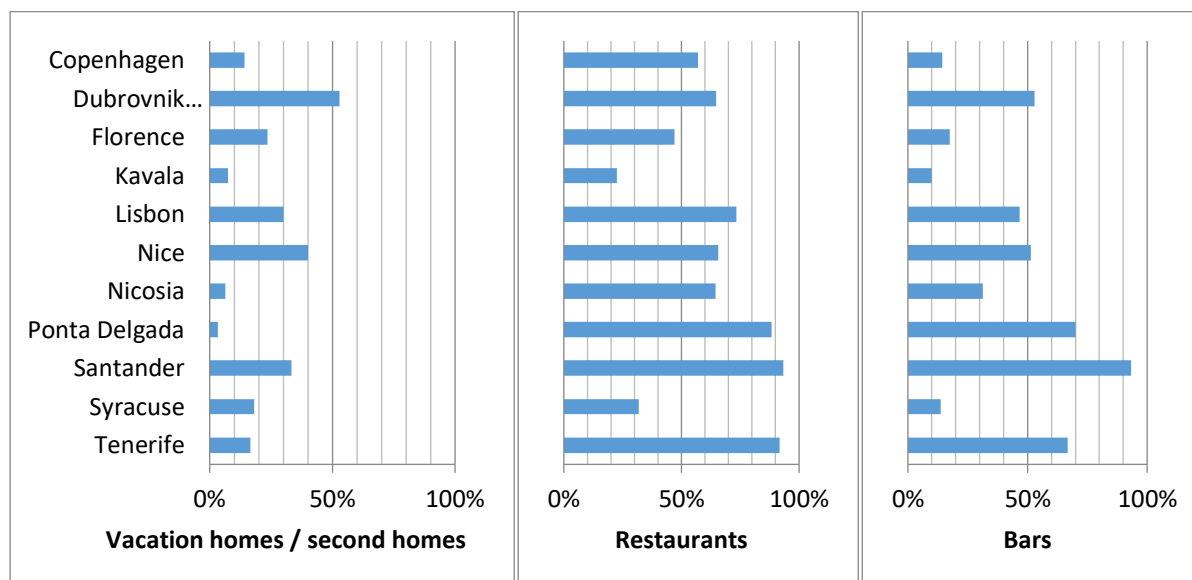
*Multiple answers possible.

The waste workers were asked what the main sources of waste production are in relation to tourism in their city/region. In general, hotels and restaurants are seen as tourism's main sources of waste production, followed by street bins and bars. Relatively few waste workers state that the catering sector and vacation homes are main sources of waste production (see figure 23).

Figure 24 reveals that there are various differences between the pilot cities/regions. Most notably is that some sources of waste production have high scores in some cities and low scores in others cities. This is particularly true for the catering sector and bars. Maybe these differences can be explained by differences in types of tourism (for instance city trip and beach trip) and types of tourists (for instance age) who visit the pilot cities/regions.

Figure 24: Main sources of waste production depending on tourism according to waste workers by case city/region *



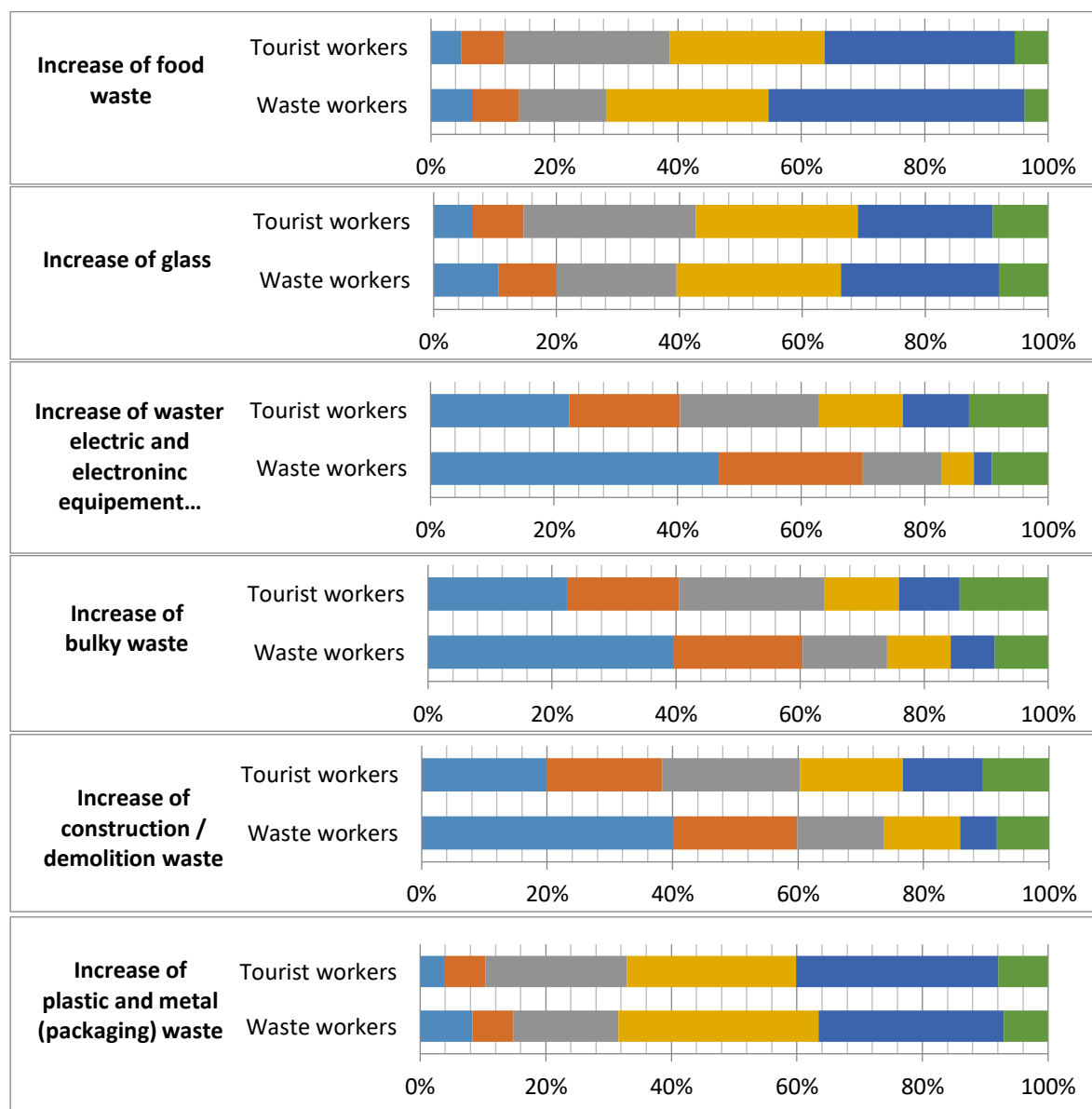


*Multiple answers possible.

In more detail both waste workers and tourist workers were asked how they rate the effect of tourism on various aspects of the waste production. The respondents could answer in a scale from 1 (very low) to 5 (very much). According to both waste and tourist workers, tourism has a large influence on the increase of food and packaging waste, and to a lesser extend the increase in glass (see figure 25). Both groups of workers, but particularly waste workers, are of the opinion that tourism only to a low degree affects the increase of WEEE, bulky and construction waste. If this difference reflects different levels of knowledge about waste production, this indicates that tourism only has a small contribution to the WEEE, bulky and construction waste (based on the assumption that it is likely that waste workers have a higher level of knowledge about waste than tourist workers).

Figure 25: Main effect of tourism in waste production, according to waste workers and tourism workers





There are some remarkable differences in opinion between tourists and waste workers. Waste workers more often than tourist workers, have the opinion that tourism increases the amount of unsorted waste. However, waste workers do believe to a lesser extent than tourist workers, that tourism decreases the quality of sorted materials.

Waste management and tourism

The waste workers were asked to rate the waste management efficiency in their city/region by either 'not efficient', 'pretty efficient' or 'really efficient'. In general, 65.5% of the waste workers in the survey rate the waste management in their city/region as 'pretty efficient'. Only in the Dubrovnik Neretva Region and in Syracuse the waste management was rated as not efficient by a majority of the respondents (see figure 26). In Copenhagen



and Kavala, a relatively large share of the waste workers qualifies waste management in their city as 'really efficient'. So, in general waste workers are of the opinion that the efficiency of the waste management practices in their city/region is not at its highest level possible.

Figure 26: How waste workers rate the waste management efficiency in their city/region

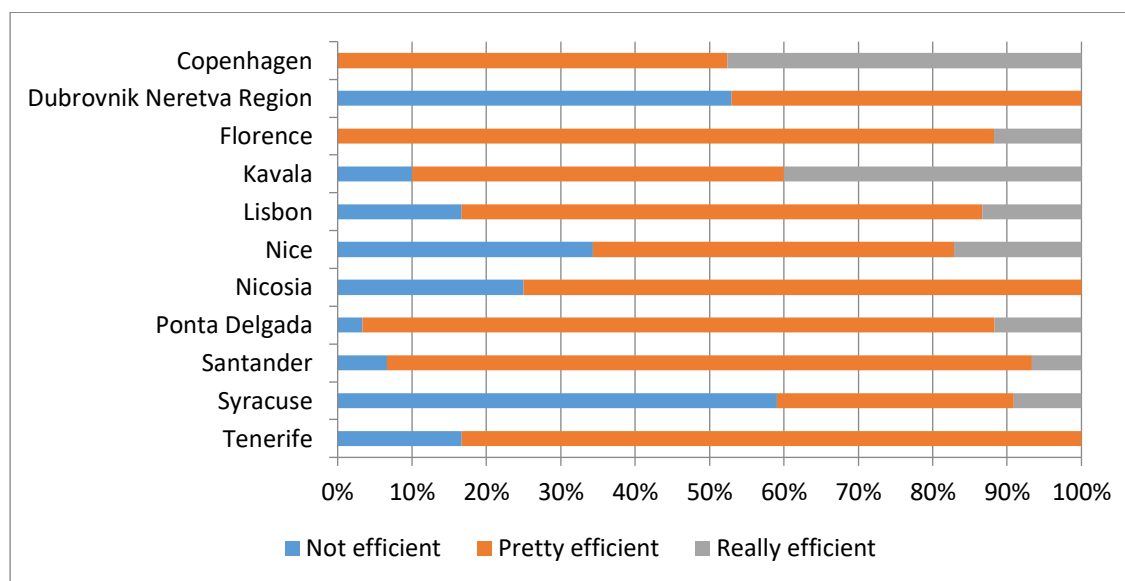
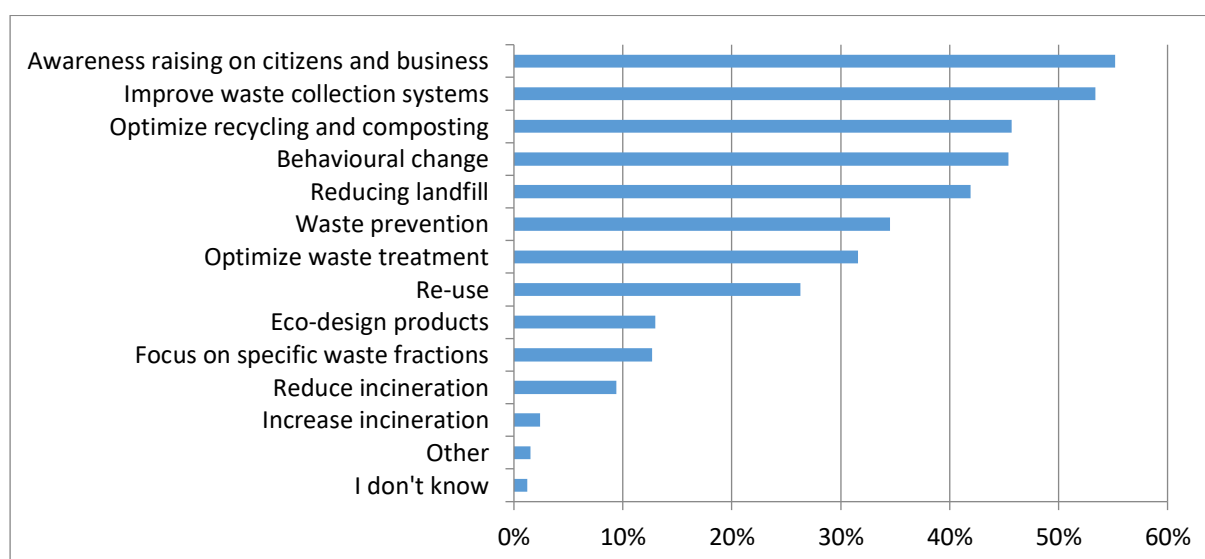


Figure 27: Waste management priorities, according to all waste workers*

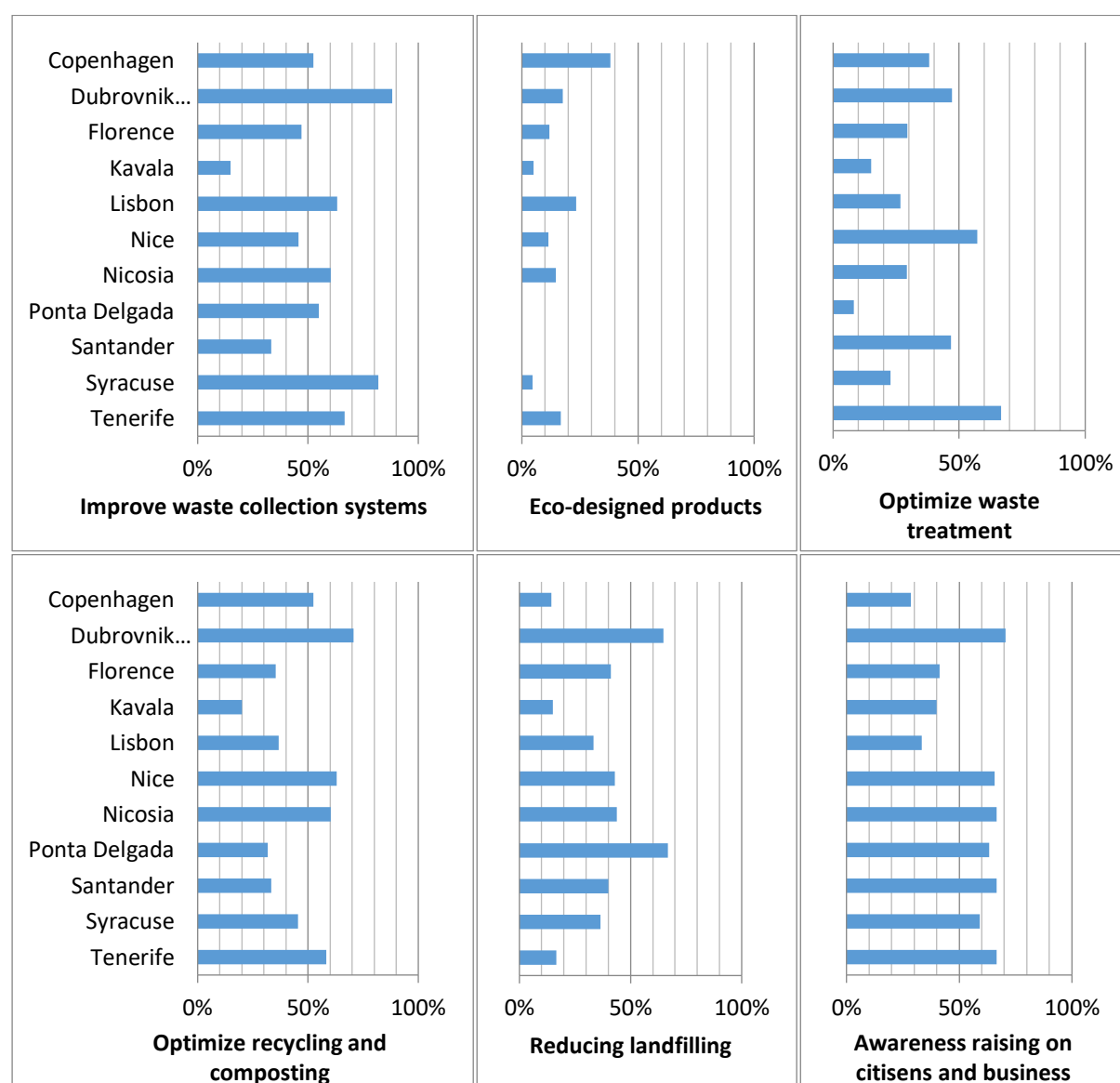


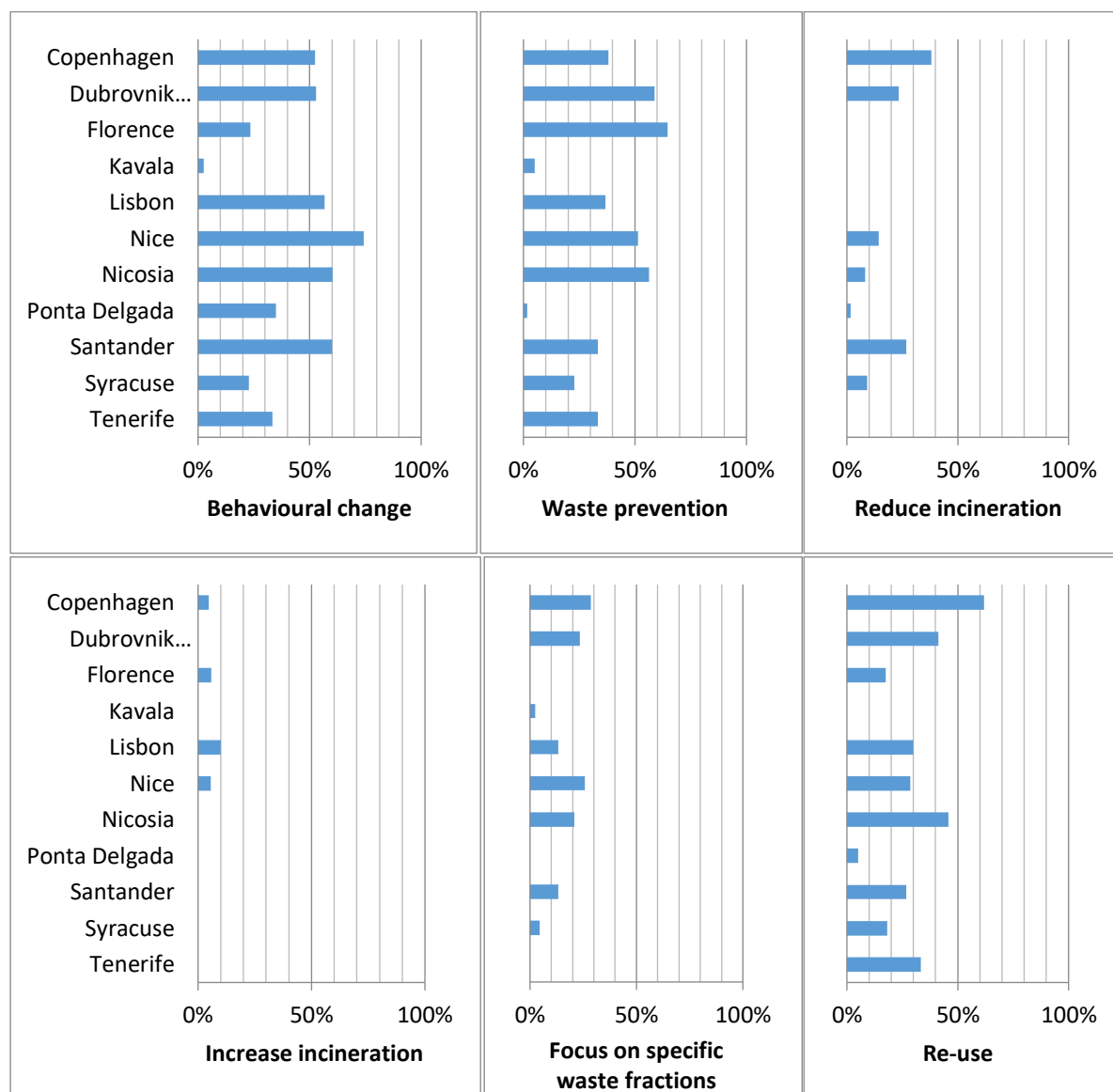
*Multiple answers possible.



Waste workers were also asked about waste management priorities. More than 50% of the waste workers have the opinion that raising awareness and improvement of waste collection systems should be priorities (see figure 27). Very few waste workers designate the reduction of incineration, a focus on specific waste fractions of eco-design products as waste management priorities.

Figure 28: Waste management priorities in case city/region, according to the waste workers*

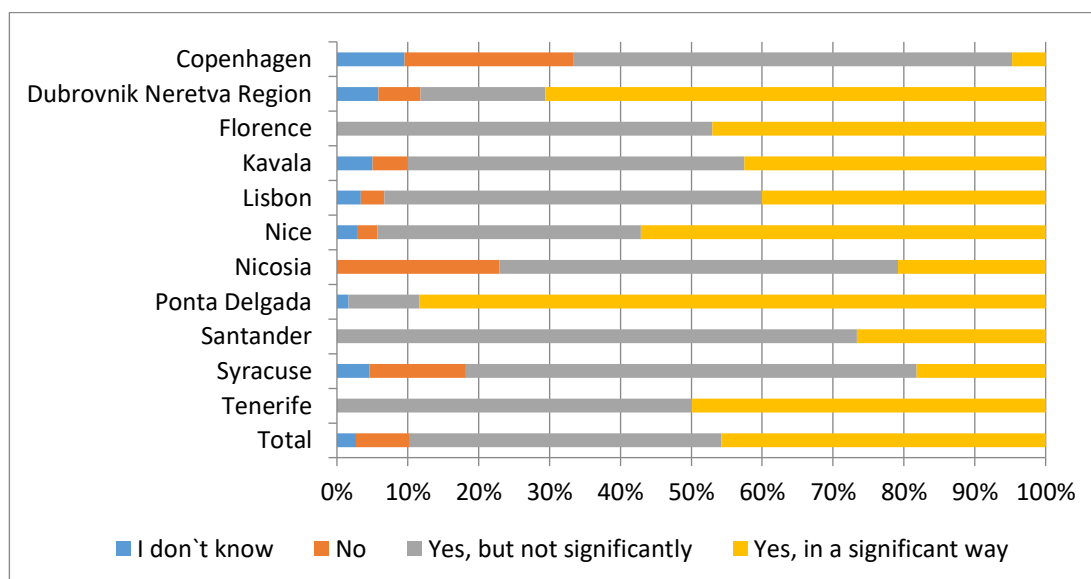




*Multiple answers possible.

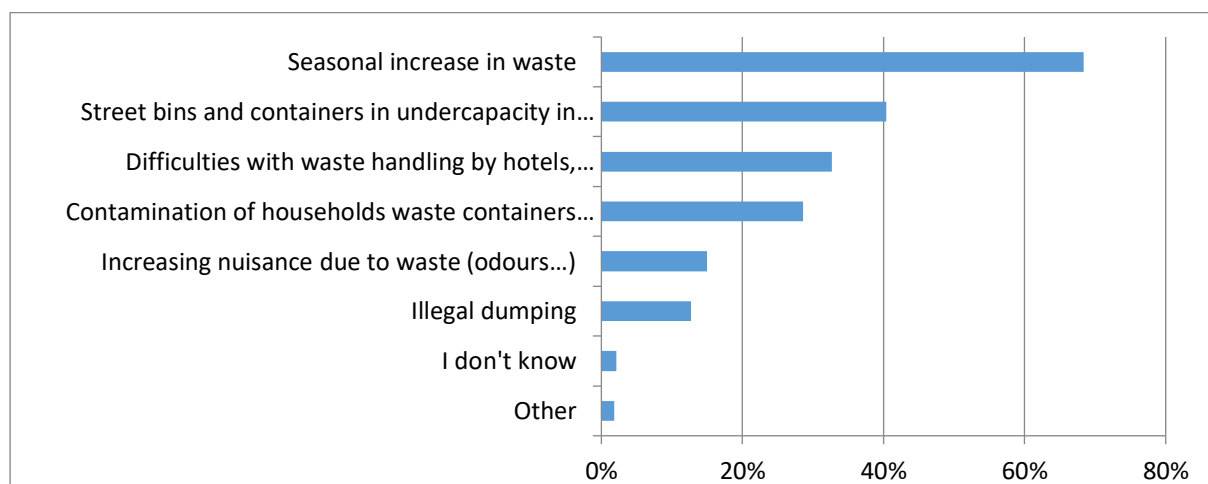
When we look at the waste management priorities mentioned in the pilot cities/regions, then we see several differences. Kavala stands out because waste workers in this city prioritize a fewer number of actions than the waste workers in the other cities/regions. From the analysis, it clearly stands out that actions focusing on specific fractions and eco-design of products are not considered as priorities from waste management workers in all the pilot cases. It is interesting to underline that both increasing incineration and reducing it was not considered as relevant for almost all pilot cases. An outcome of this analysis also regards the fact that awareness raising campaigns and behavioural changes have been selected as important priorities in almost all pilot cases. Concerning the optimization of waste collection and treatment different results came out from different pilots.

Figure 29: The way tourism influence waste management in their case city/region according to the waste workers



The majority of the waste workers in all case city/regions think that tourism influences waste management. In total 90% think so. 47% even thinks that tourism influences waste management in a significant way. This is particularly the case in Ponta Delgada and Dubrovnik (see figure 29).

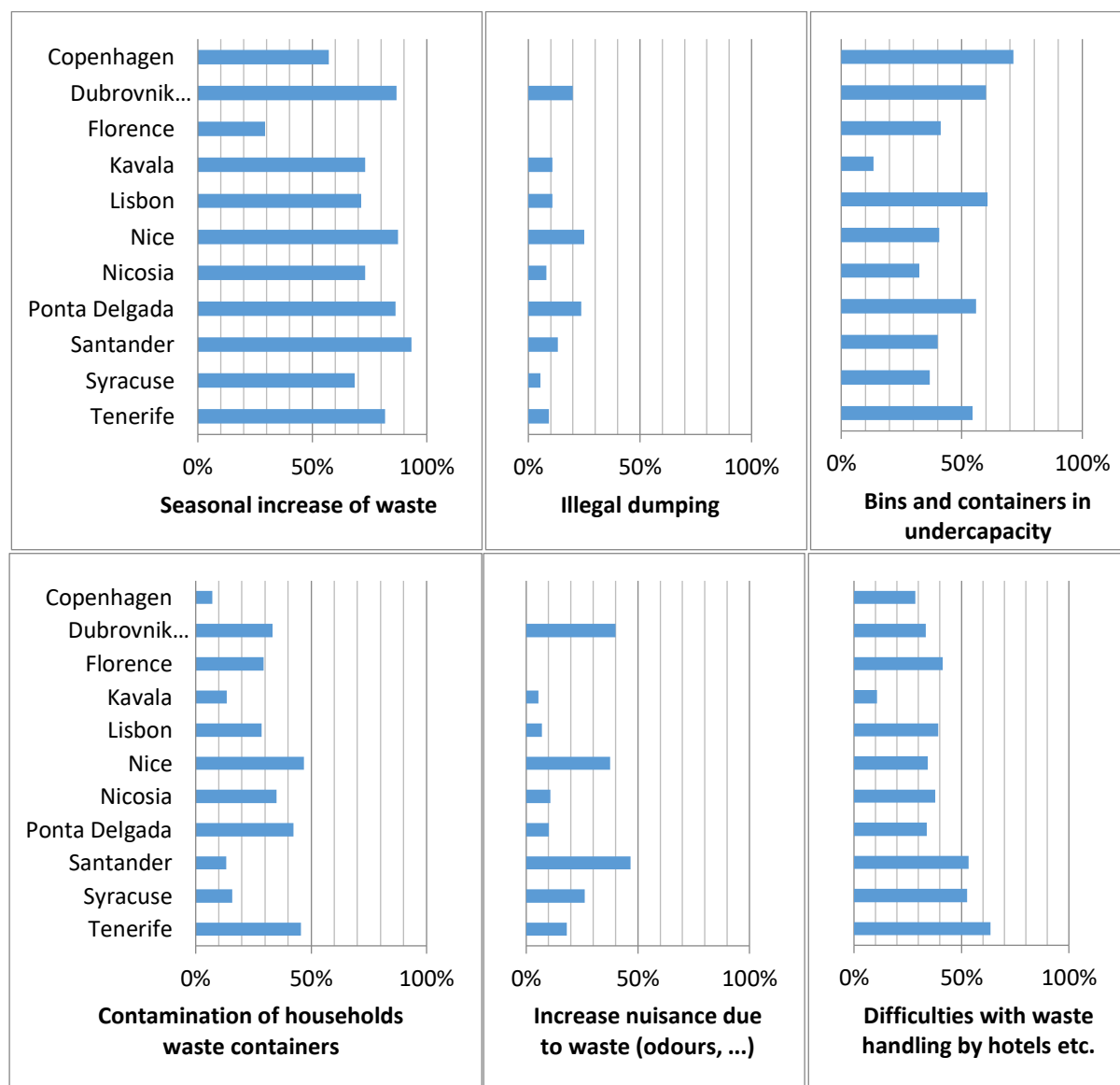
Figure 30: How tourism affects waste management according to waste workers*



*Multiple answers possible.

According to the waste workers the seasonal increase in waste due to tourism affects waste management most. 68% of the waste workers do think so. According to the 40% of the waste workers waste management affected by under capacity of street bins and containers in some areas (see figure 30).

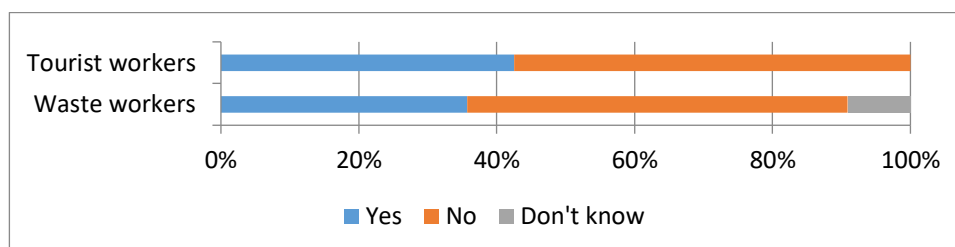
Figure 31: How tourism affects waste management according to waste workers in case city/region*



*Multiple answers possible.

When looking at the differences between the pilot cities/regions what strikes most is that most of the pilots agreed on the fact the seasonality it is an issue in the increase of waste due to touristic activities. The other two groups that gather the highest share of respondents are related with the under-capacity of bins and containers and the difficulties for tourism hospitality industries in deal with those.

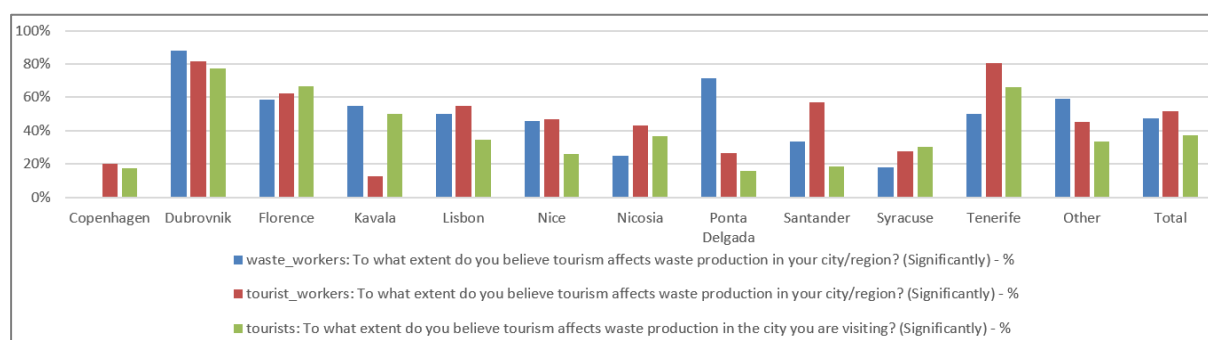
Figure 32: Opinion of tourist and waste workers about if visitors take care of waste production and management as they do in their households



Most tourist and waste workers think that visitors do not take care of their waste production and management as they do in their households. This seems to be in line with literature findings earlier in this report, where it was concluded that tourists generally behave less environmentally friendly at their holiday destination than at home.

- To what extent do you believe tourism affects waste production in CITY?

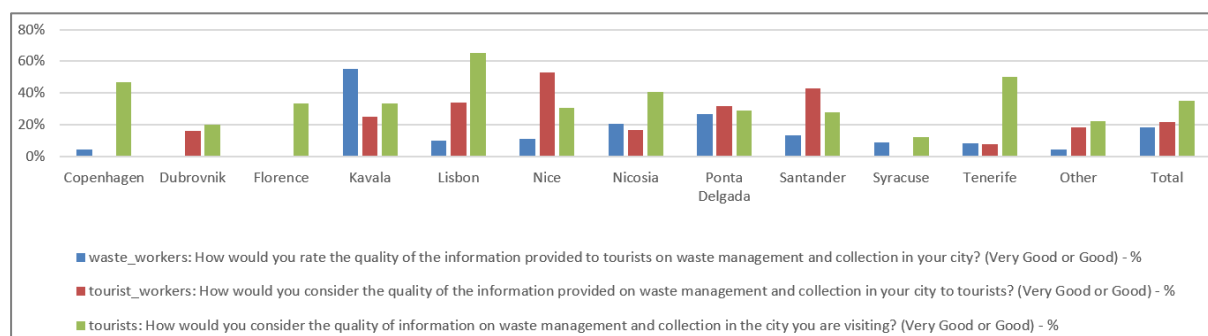
Figure 32: Share of respondents answering "Significantly" divided per city



4.2.2 Waste management / information in city

- "How would you consider/rate the quality of the information provided on waste management and collection in your city to tourists?"

Figure 33: Share of respondents answering "Very good" or "Good"

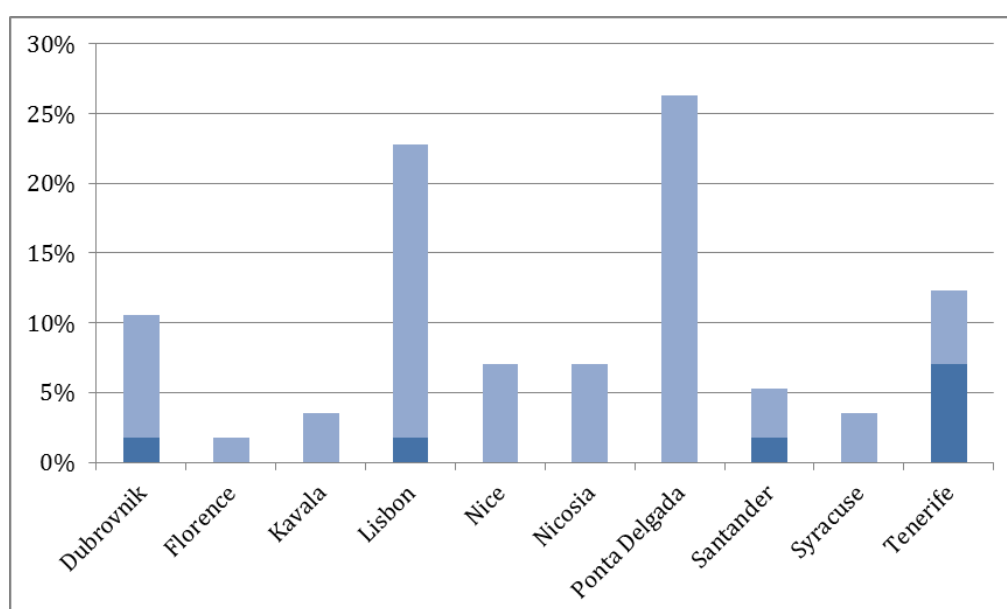




In terms of the provided information, the graph illustrates that for instance in Ponta Delgada all three surveyed groups have a more or less equal perception of the provided information, whereas for instance in Lisbon, Nice and Tenerife, there are huge differences in terms of the perception of the provided information between the three surveyed groups.

- “How do you consider the information on waste management and collection provided specifically by the tourism sector (hotels, leisure activities, parks, restaurants, etc.) to visitors?”

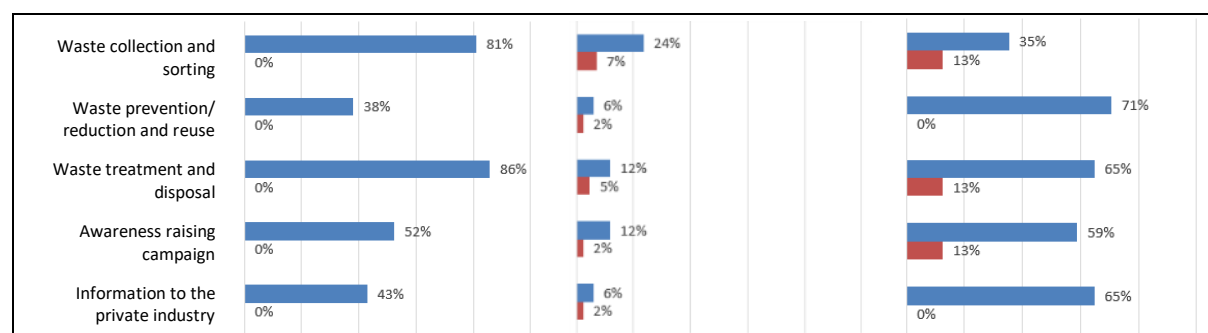
Figure 34: Share of respondents answering “Really good” or “Good” among tourist workers

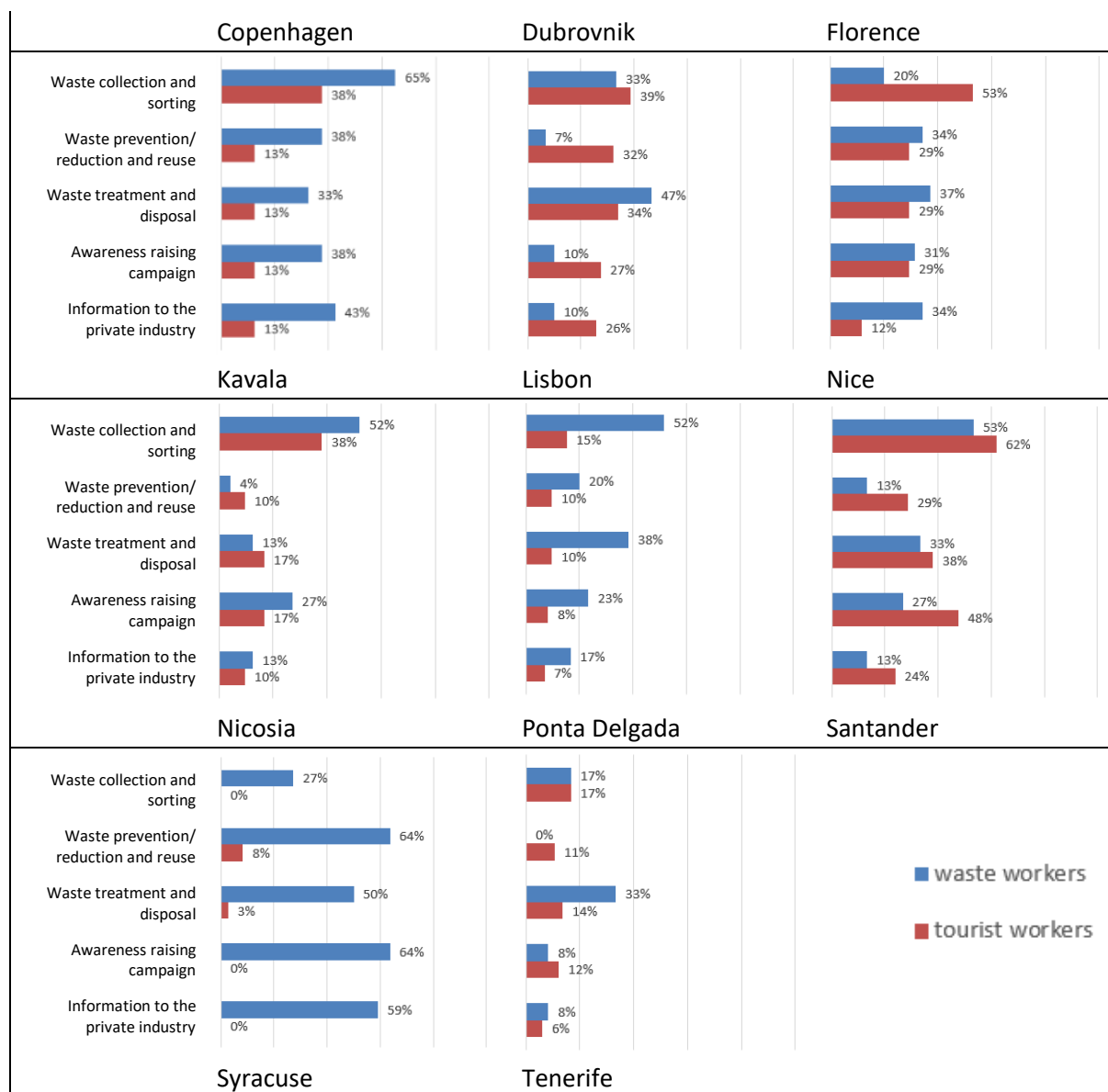


When it comes to information specifically provided by the tourist sector, obviously there is relatively high satisfaction (however, with around 20-25% still not too high) in Lisbon and Ponta Delgada, interestingly both Portuguese cases.

- How do you consider your municipality/region is performing in the following waste management/prevention activities?

Figure 35: Share of respondents answering “In an excellent way” or “Very good”





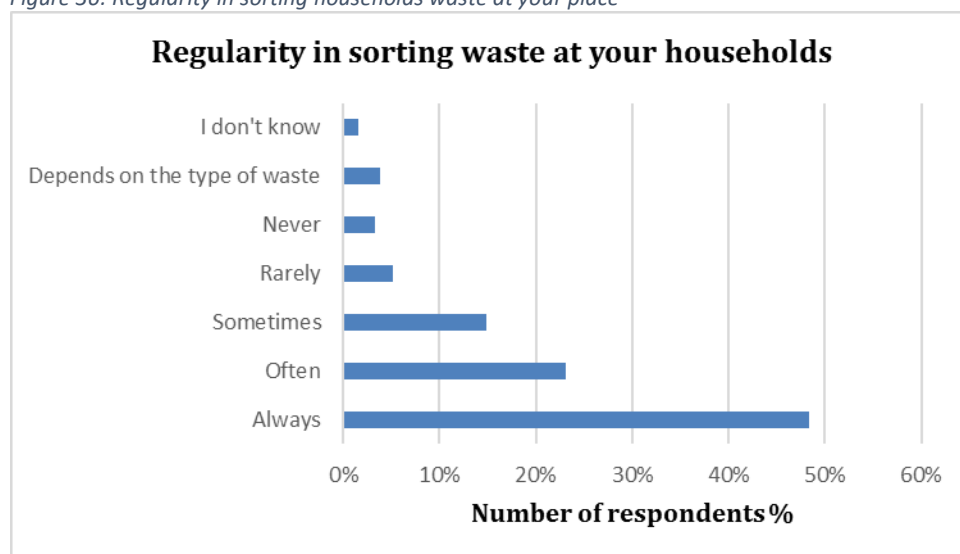
In terms of waste management prevention activities there is quite a gap between the opinion of tourist workers and waste workers in all pilot cases, the latter being mainly more satisfied. It is pretty interesting to notice that in Copenhagen, Syracuse, Kavala and Florence waste workers are generally satisfied with the waste management system of their cities. On the other side the lowest degree of satisfaction can be noticed in Dubrovnik, Lisbon, and Tenerife. The overall satisfaction is considered excellent or really good concerning waste collection and sorting in almost all the case studies – except Tenerife, Syracuse, Nice and Dubrovnik, by almost or more than the 50% of the respondents. Information to the private industry are in most of the cases not considered excellent or very good, apart from the case of Syracuse and Florence. Action aimed at waste prevention/reduction and reuse are considered really good or excellent by more than 60% of respondents in Syracuse and Florence, while these are not considered as satisfactory by the majority of the workers coming from the other pilots.



4.2.3 Individual (tourists) behaviour /company's waste management

- Please rate the regularity in sorting household wastes at your place

Figure 36: Regularity in sorting households waste at your place



Around 70% of respondents sort their waste always or often in their own households.

- Which kind of waste do you usually sort in your household?

Figure 37: Waste Fraction sorted at your households

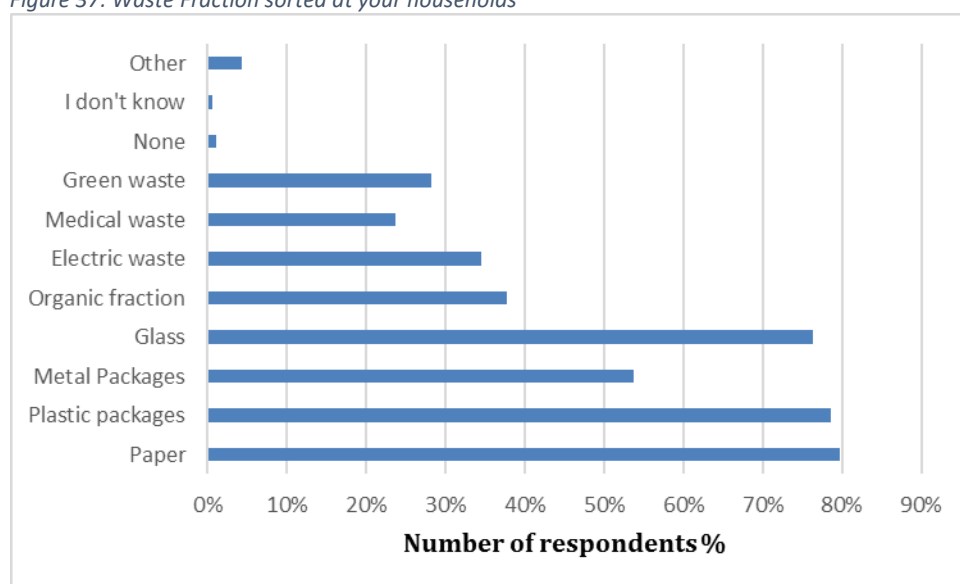
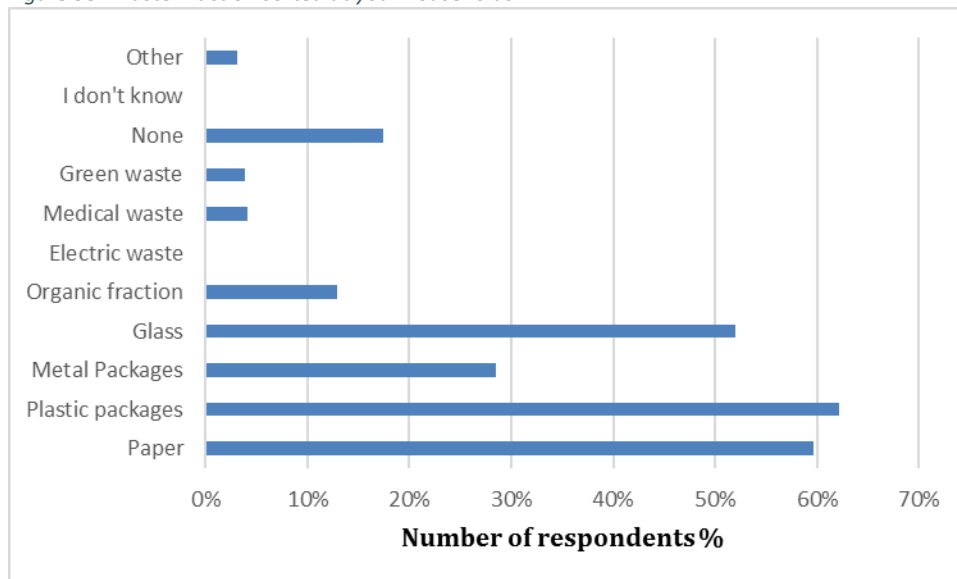




Figure 37 clearly shows that paper, plastic packages and glass are the waste fractions that are recycled the most by the respondents- almost 80%. These numbers drop to 50% and 35% concerning metal packages and the organic fraction. Almost 35% of the respondents recycle electric waste and medical waste.

- What waste fractions did you sort/are you sorting during your holidays?

Figure 38: Waste Fraction sorted at your households

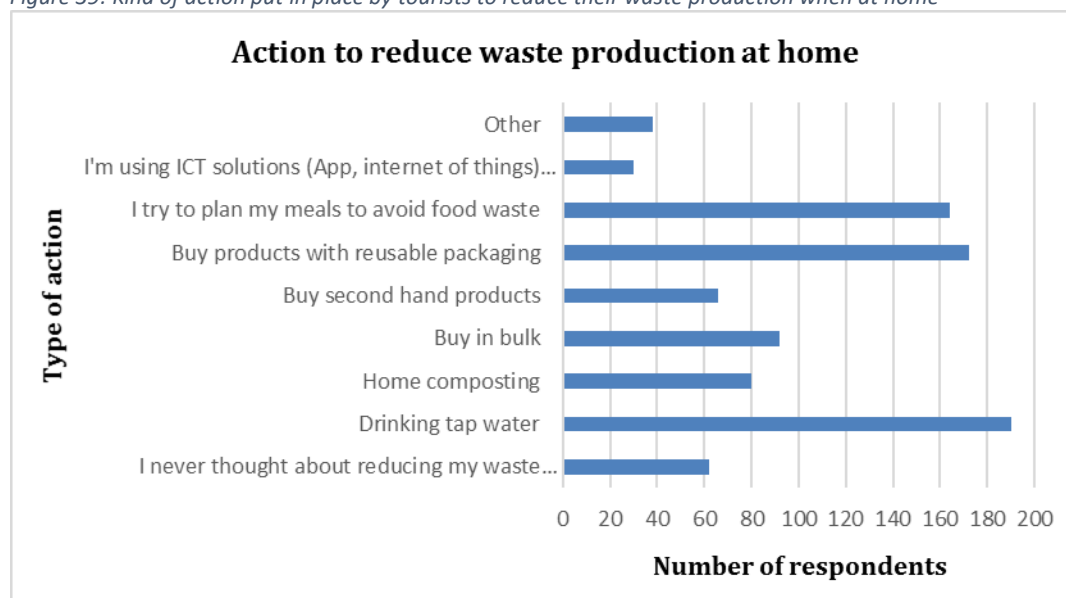


Comparing Fig. 38 and Fig. 37 it is interesting to see that there is a reduction in the share of respondents who recycle their waste fractions on holidays, dropping from 80% to 60% for plastic packages and paper and from 75% to a bit more than 50% for glass. Just 10% of the respondents take care about their organic waste when on holidays, compared with 35% of people doing it at their households.

- If relevant, please tick the actions you do at home to reduce your waste production



Figure 39: Kind of action put in place by tourists to reduce their waste production when at home



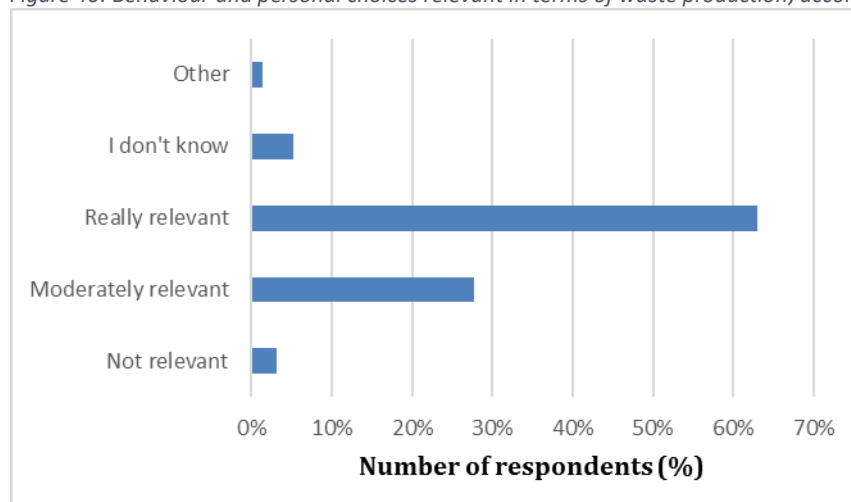
Concerning the actions that respondents put in place to reduce their waste production at home it clearly comes out that drinking tap water, buying products with reusable packaging and planning the meals to avoid food waste are the most common actions considered.

- What prevents you from sorting your waste in your household?

Just few replies, not relevant

- To what extent do you consider individual behaviours and choices relevant in terms of waste production?

Figure 40: Behaviour and personal choices relevant in terms of waste production, according to tourists

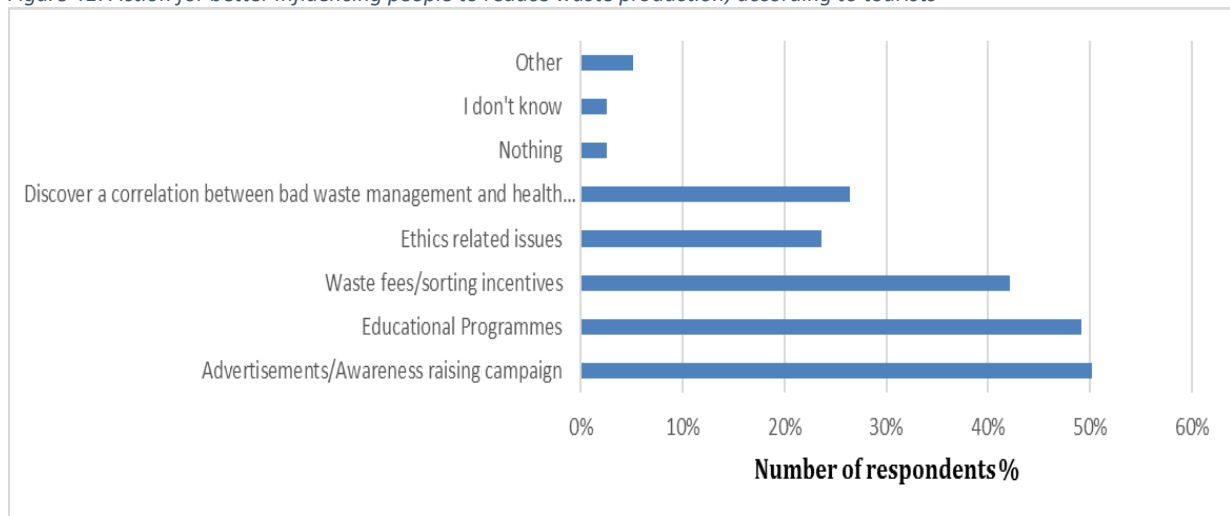




Within the URBANWASTE project, it is really interesting to see that behavioural choices are considered as really relevant for tourists in terms of waste production

- What could influence you more to reduce your waste production?

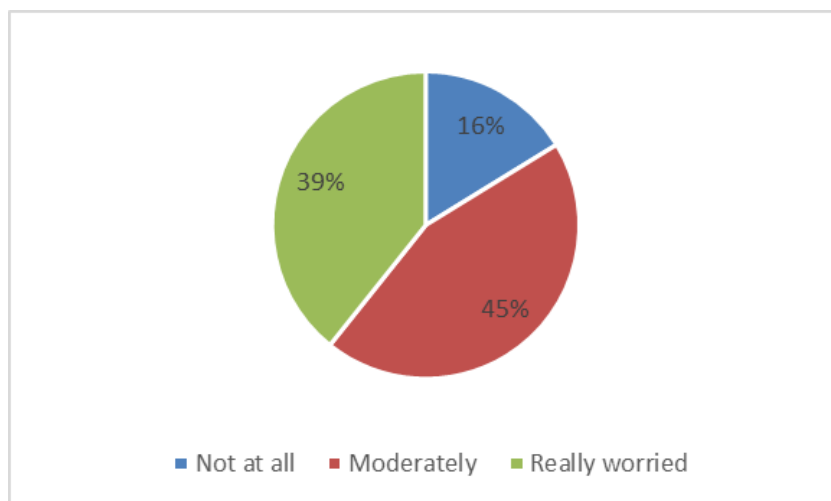
Figure 41: Action for better influencing people to reduce waste production, according to tourists



According to the tourists involved in the analysis, advertisements/awareness raising campaigns and educational programmes have been considered to be the most relevant actions to implement in order to reduce waste production. It will be important to consider these replies in the development of the eco-innovative and gender sensitive analysis within WP4. Waste fees and sorting incentives, were also considered relevant actions in this sense, according to around 40% of the respondents.

- How worried are you about food waste at home?

Figure 42: Food waste at home



- How worried are you about food waste during your holidays/visit?

Figure 43: Food waste on holidays

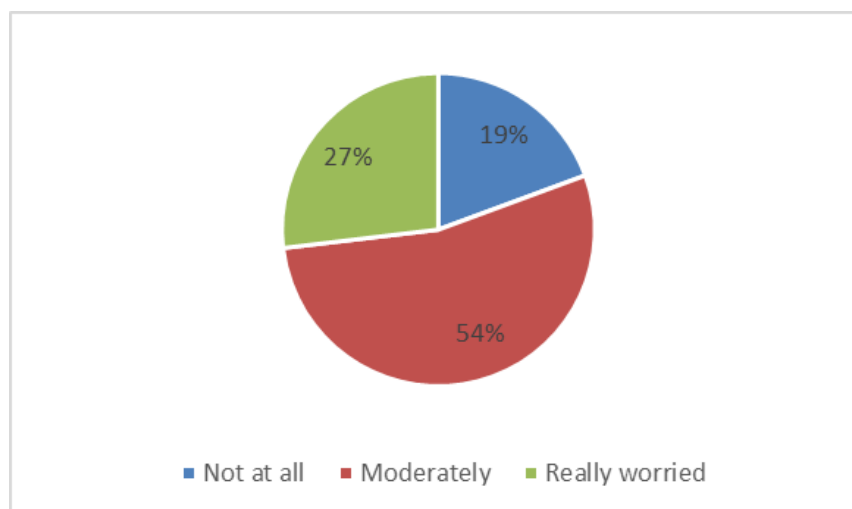
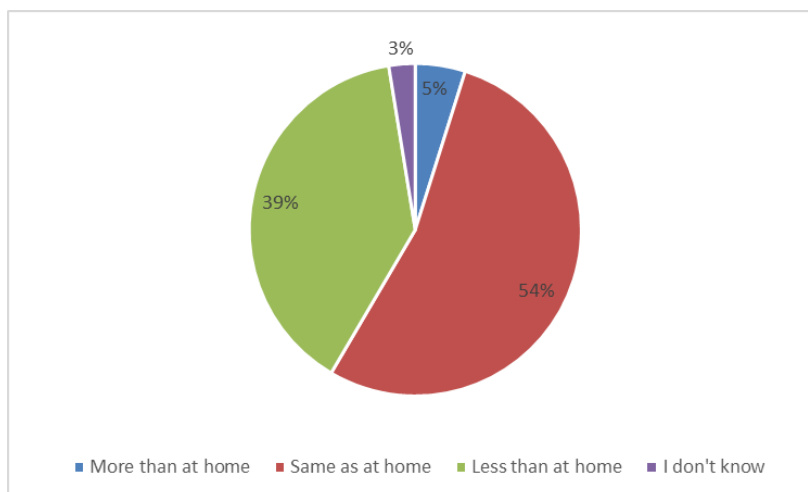


Figure 42 and 43 can be analysed together to find interesting correlation among those. 39% of respondents stated that are really worried concerning food waste at home, while just 27% cared at the same level, when they are on holidays. Most of the people moved from really worried to moderately worried when on holidays, and the share of not worried at all dropped from 19% to 16%.

- When travelling, do you take care about your waste production as you do at home?

Figure 44: Differences in caring about waste production between at home and on holidays



Concerning waste production more than half of the respondents, 54%, stated that they take care about waste production on holidays at the same degree that they do at home. It is interesting to notice that almost 40% of tourists declared that on holiday they care less about their waste production.

- When travelling, do you take care about your waste management/sorting as you do at home?

Figure 45: Differences in caring about waste management and sorting between at home and on holidays

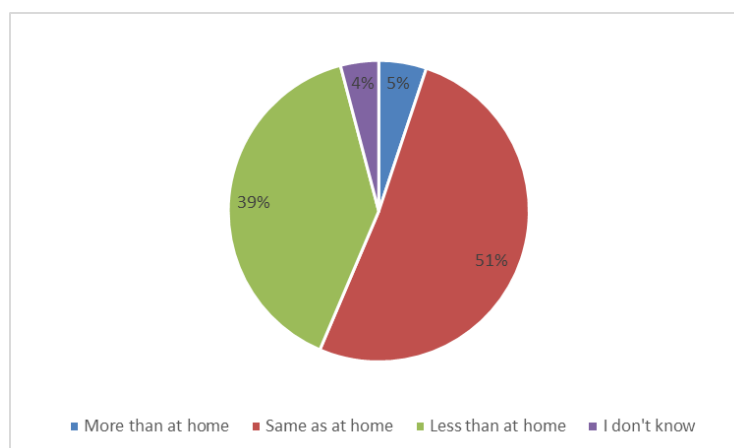
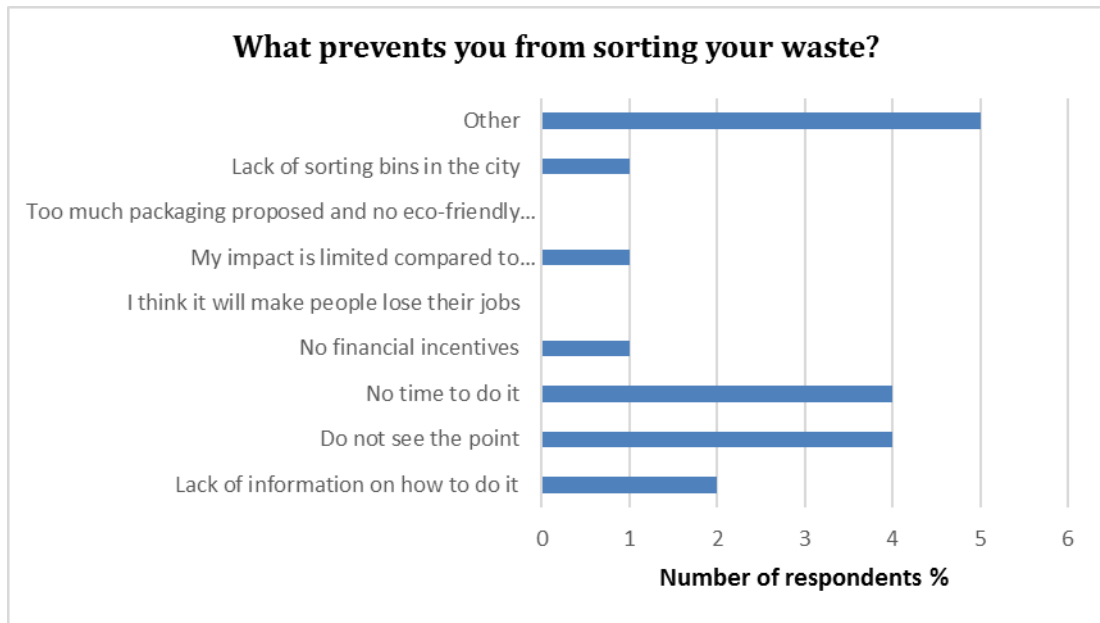


Figure 45 reported similar evidence to the previous figure. Indeed, the same rate of respondents, 39%, declared that on holidays they care less about waste management and sorting than at home.

- What do you think prevents you from sorting your waste when on holiday?

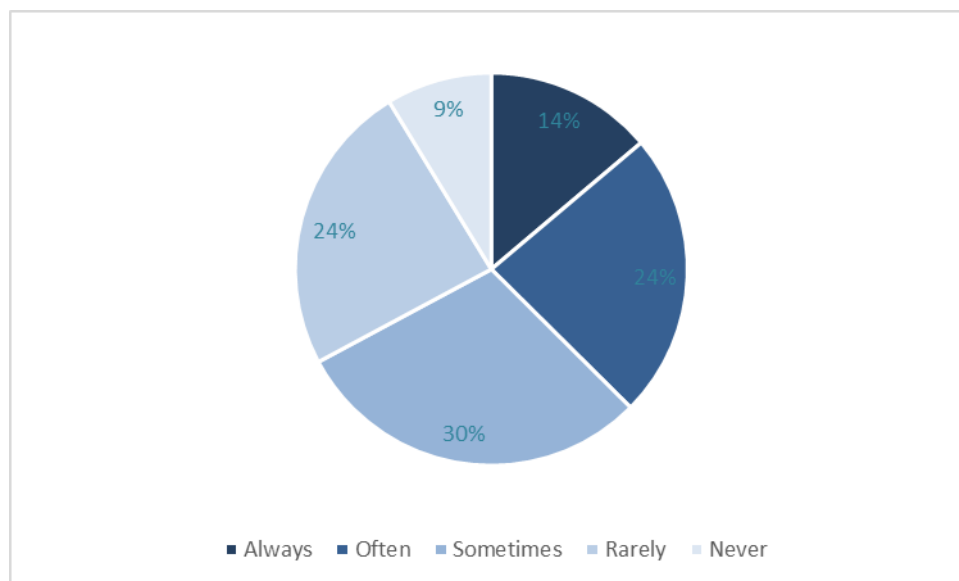
Figure 46: Obstacles encountered in sorting waste



Just very few respondents answered to this question since, most of those stated their regularity in sorting their waste in the question before

- Have you ever thought/are you thinking about reducing/better managing your waste while travelling?

Figure 47: Frequency of thought among better managing/reducing waste while travelling



Almost 40% of the tourists stated that they always or often thought about better managing/reducing their waste when on holidays, while more than 30% never or rarely thought about this issue. In this sense, URBANWASTE

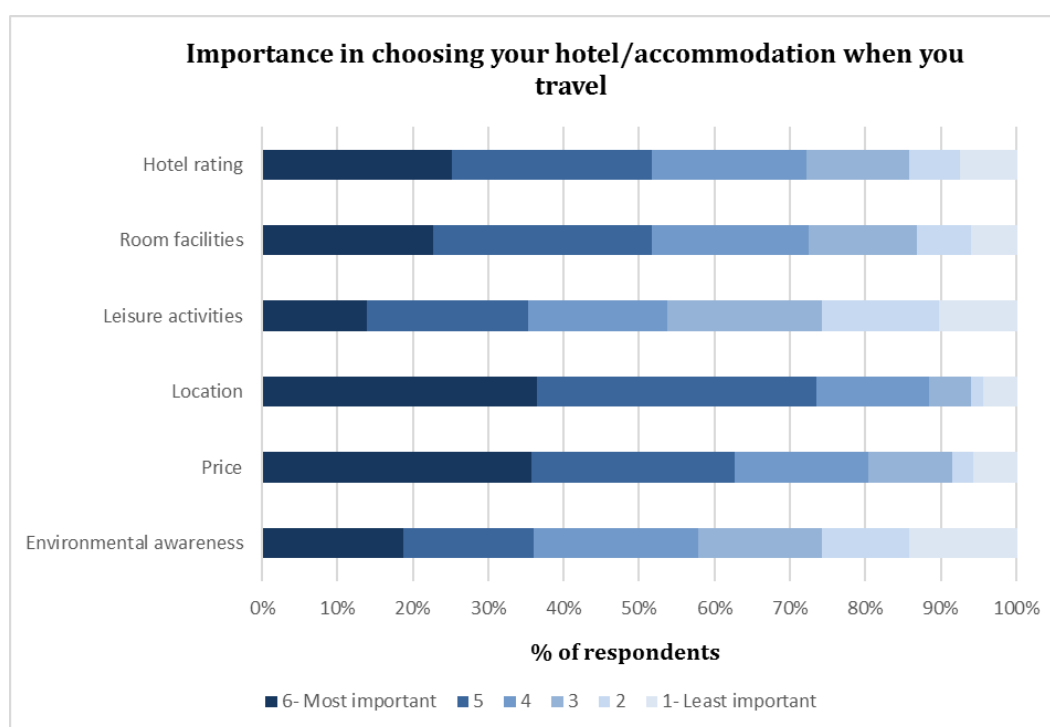


should improve this situation working on one side to facilitate the conditions for the people willing to improve their behaviours and on the other side, better addressing the communication towards the other tourists that never or rarely thought about their waste management while on holidays.

4.2.4 Preferences / accommodation choice

- Please rank the following criteria (from 1 to 6) considering their importance in choosing your hotel/accommodation when you travel

Figure 48: Importance of choosing your accommodation when travelling



According to the data presented in Fig. 48, location and prices are, among the criteria identified, the most important condition for the choice of the accommodation when travelling. Almost 70% indeed declared that these are the most important criteria to consider. After those, relevance has been given to hotel rating and room facilities from 50% of tourists and just 30% consider environmental awareness of the hotels and leisure activities offered as most relevant or really relevant options, although there are substantial gender differences in these responses, see section 3.3.

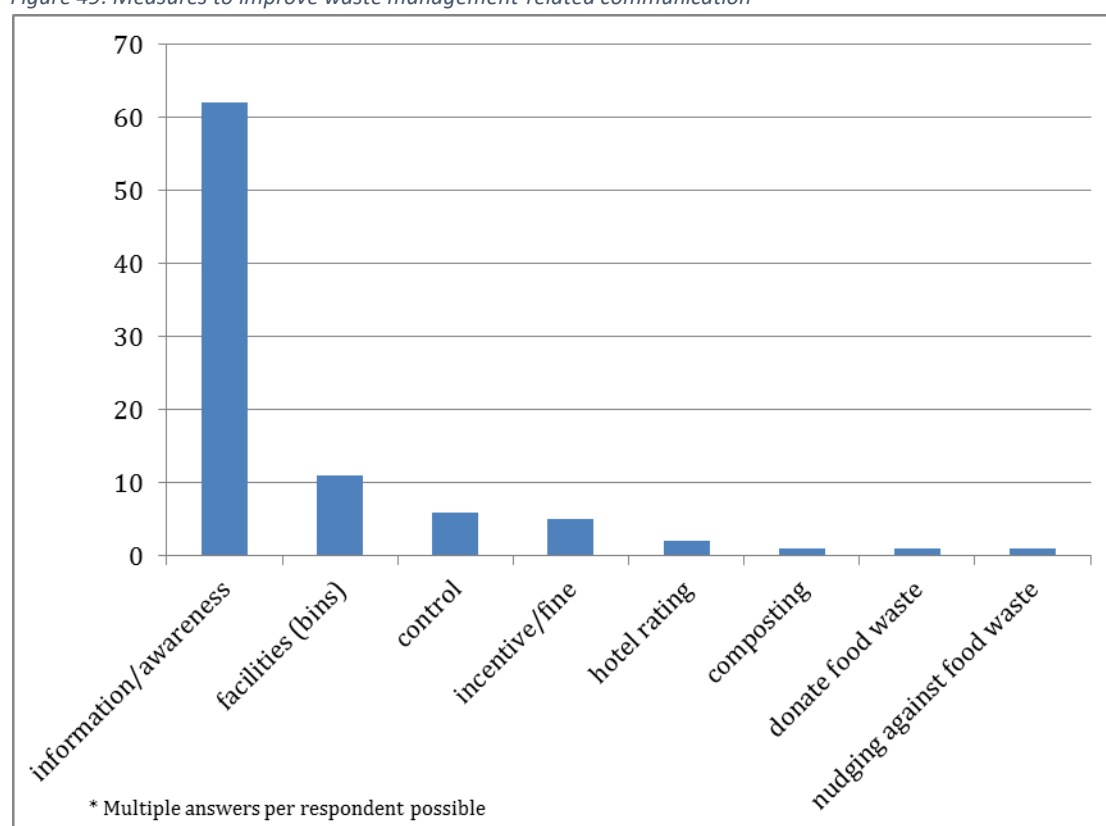


4.2.5 Suggestions for improving waste behaviour / situation

- “Please briefly explain your ideas to improve communication in the tourism industry related to waste management”

Although this question aimed at improvement of communication, we can see that apparently also facilities (bins), control and incentives/fines are considered as important measures by **tourist workers** to improve waste management.

Figure 49: Measures to improve waste management-related communication



In the following table we provide some examples of the main ideas that were suggested to improve communication in the tourism industry related to waste management:

Table 2: Ideas on how to improve waste management-related communication

Pilot case	Ideas to improve communication related to waste management
Copenhagen	“More information primarily in accommodation outlets” “Use nudging to decrease food waste. E.g. providing smaller plates and using shallower serving plates.”



Dubrovnik	"Mandatory bins for separation of waste in hotels and apartments. Control and fines!"
Florence	"Create information tools: brochures, app, dedicated to tourist site pages" "It should be a widespread information campaign especially at the facilities of all kinds (from hotels to bed and breakfast as well as apartments). [...]" "Dedicated waste communication campaign through Hotels, Tourist Info Point, Tourist Guide, etc."
Kavala	"informing customers and innkeeper [...]"
Lisbon	"Brochures in different languages in hotel rooms, containers for separation in rooms, information on the production of waste at city level, ..." "Scoring in the classification of the number of stars of hotels due to their efficient segregation of waste. [...]" "[...] Partnerships with the plastics industry to create a wastebasket for hotel rooms, with the separation of the 3 wastes at acceptable prices. The value of waste separation paper / containers is too high. [...]" Increased inspection of the quality of recyclable waste."
Nice	"Communication on the beach: ashtray trash ..." "People who speak two / three languages at the tourist office, town centre (Massena, etc.) who explain the different methods to contribute to a cleaner city during their stay. Flyers in several languages (English, Italian, Spanish)" "Communication to professionals on good waste management."
Nicosia	"Provide posters and adequate waste collection bins" "Relevant notes in hotel rooms, welcome message in hotels rooms' TV screens, relevant mobile app as soon as they reach their hotel, etc." "-Workshops/Seminars, -Give examples of best practices through on-site visits" "Waste Mapping Manual was developed as part of the partnership (CSTI, CTO and Travel Foundation) to be implemented in the hotel industry." "Information on important points of the city and the hotels"
Ponta Delgada	"Reinforce signalling and installation of trash bins and bins at sights and points of interest." "Outdoor waste disposal sites" "Translation and increased visibility" "Information in places with greater concentration of visits, greater availability of eco-points with information points. [...]" "The best communication would be to set an example, something that locals do not do. There is much more lack of environmental awareness on the part of the locals than on the part of the tourists." "Waste exchange machines for discount vouchers / prizes / offers."
Santander	"Try to make every event sustainable, with repercussion for the city" "Placing information panels in the strategic centres of the city as well as in train stations, ferry and airport."

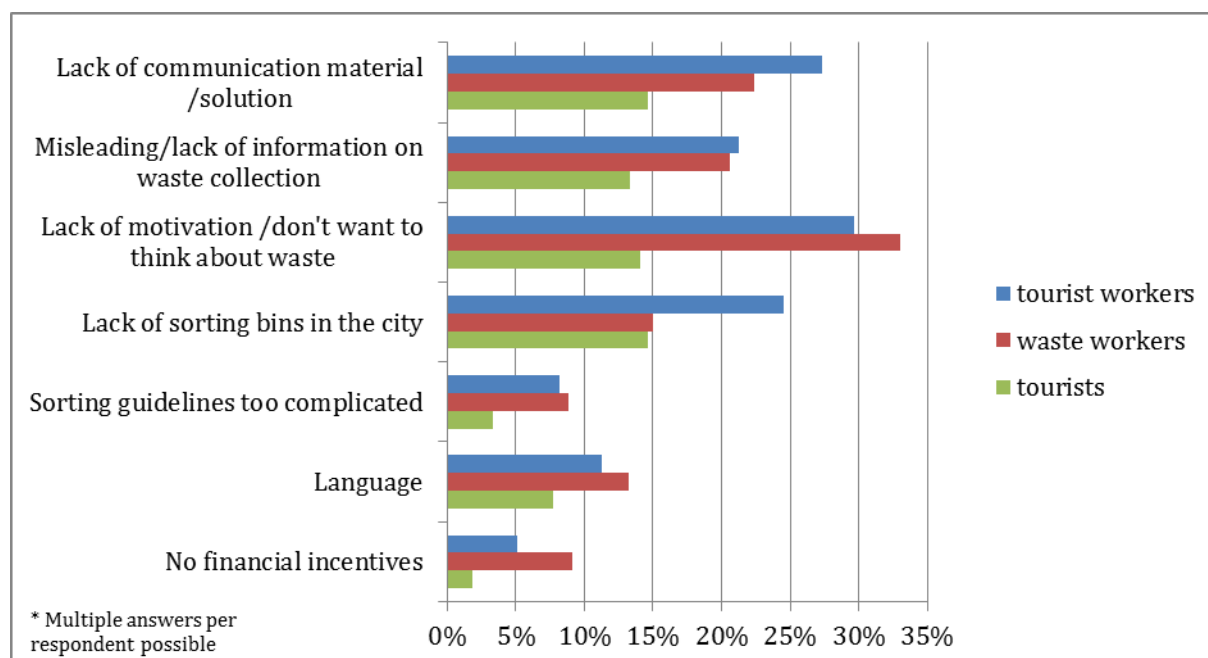


Syracuse	"training for tour operators - information through the IAT, public offices for information and tourist accommodation - more tourist information points with staff trained" "composting on a small scale - sensitize the customers especially Italian - reduce the production of waste" "sensitize primarily the operators of accommodation facilities, museums, churches and all the facilities to provide tourist services" "Impose separate collection in the regulation of the tourist facility. Make available bins for separate waste in large quantities and in the entire hotel." "Since there is no information at all, any information would be an improvement. Inform big 'waste producers' like hotels and restaurants, how they can efficiently AVOID waste and then recycle - and control it! [...]"
Tenerife	"Providing videos to the tourist establishments to be able to incorporate them into the TV channels of information TV in the hotels." "FOR EXAMPLE, IDENTIFY EACH CONTAINER CLEARLY, SPECIFYING IN SPANISH-ENGLISH AND GERMAN, WHICH CORRESPONDS EACH." "General commitment of all companies related to tourism, to carry out awareness campaigns towards their own customers, each company must contribute its bit, not some individually. [...]" "First place a responsible person in the hotels only for this subject. Secondly train this person by the corresponding city council and in turn this person trains the hotel staff. Please put in the hotel brochures this topic and deliver the customer to his arrival along with the key."

The vast majority of the suggested ideas to improve communication in the tourism industry related to waste management refers directly to information and awareness. Especially tourist establishments such as hotels and other types of accommodation, but also tourist information points or tour operators should take responsibility for informing tourists about the local waste management guidelines and obligations. Another relevant point addresses the provision of waste separation facilities, such as bins, directly in hotel rooms as well as in public spaces or outdoor areas. Interestingly, some pilot cases (e.g. Ponta Delgada, Syracuse) identify particularly problems with the locals or tourists from the same country that do not provide good examples.

- "What do you think prevents tourists/you from sorting their/your waste when on holiday?"

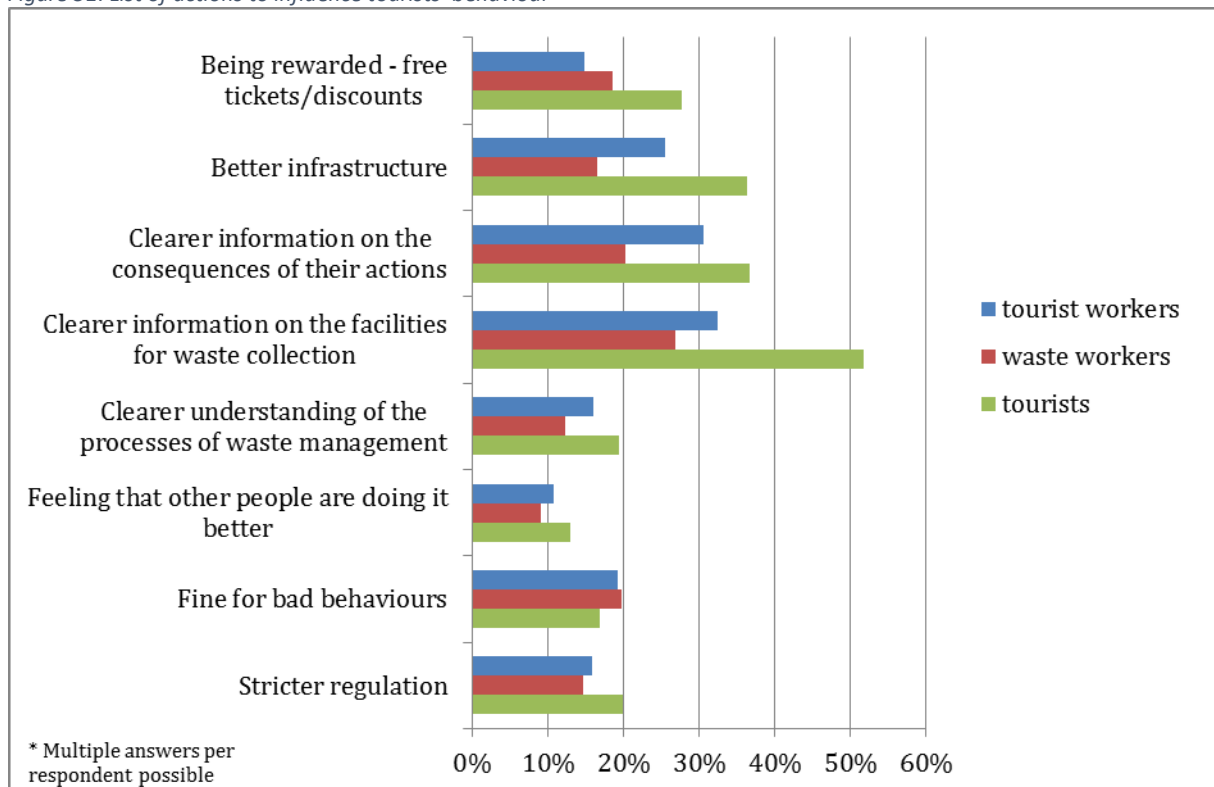
Figure 50: Barriers in sorting waste encountered on holiday





- “Which of the following actions would contribute to change tourists’/your behaviour during their holidays/travels in your opinion?”

Figure 51: List of actions to influence tourists’ behaviour



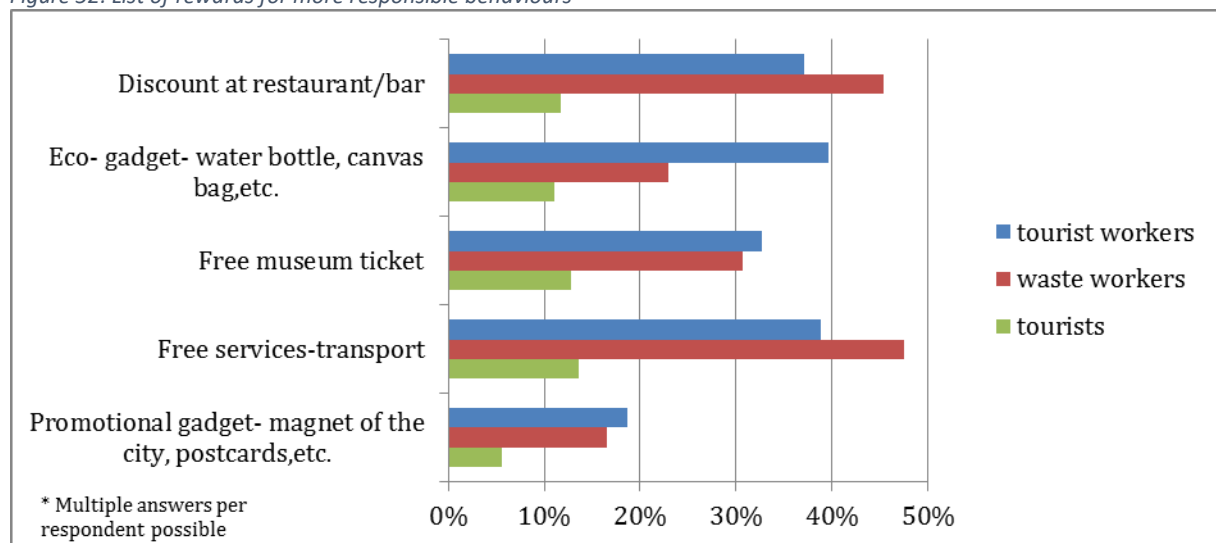
Interestingly, tourist and waste workers consider a *lack of motivation* as main reason for preventing tourists from sorting their waste. When, however, looking in the tourists’ responses for what could contribute to change their behaviour, *clearer information on the facilities for waste collection* is the most important action. We can see here again a gap between the perception of the three surveyed groups, which should be followed up on in more detail in order to match waste management policies to actual demands (by tourists).

Somehow contradicting to that are the responses shown above, where tourists considered the quality of information material relatively better than waste or tourist workers.



- “If you/visitors were to be rewarded for more responsible waste behaviour when staying in your city, which of the following options would you prefer/suggest?”

Figure 52: List of rewards for more responsible behaviours



Regarding a possible reward, tourists are least interested in a promotional gadget, which, also from a waste prevention perspective is positive, as those would only produce further waste.

4.3 Gender and waste

For more than 20 years, international legislation has provided encouragement, tools and policies for gender to be acknowledged as important: to include women in environmental decision making at all levels, and to acknowledge how environmental impacts affect women and men differently. In addition, gender equality is recognised as critical by the EU, which was the first political entity to enact ‘gender mainstreaming’. While there is, then, no shortage of legislation to potentially secure gender equality in making decisions and in assessing the impacts of these decisions, rarely are they systematically and effectively applied. This is particularly notable in environmentally related fields, including waste management, which are dominated by men and masculinist ways of working. This is likely to have an impact on waste management decisions made, and is the reason for the present focus on gender in waste management in tourist areas.

In most surveys (for example, Eurobarometer, 2014), women tend to exhibit greater environmental concern and awareness than men do, and greater propensity for environmental action. This includes actions taken to recycle and reduce waste. We would therefore expect to see some differences between men and women in responses concerning behaviour and attitudes. The results of the survey are being used to inform qualitative research conducted in local discussion groups for each of the three populations (tourist workers; waste managers, tourists). This will enable us to explore the relationships indicated in the quantitative data.



4.3.1 Tourism industry staff

Most of the literature on gender and tourism concerns unequal employment prospects in the hospitality sector where women are heavily represented in the worst paid jobs in a low pay industry. We would therefore expect to see more men in management positions, while women are concentrated in lower paid jobs such as reception work or cleaning. This was echoed in the profile of survey respondents where 60% of those reporting their jobs as Director or Manager were men, whereas 65% of those reporting their jobs as administration were women. Interestingly 55% of those reporting their job as an intern (i.e. unpaid) were women. In the respondents from the tourist industry it is notable, and paradoxical, that women dominate in both the lowest qualified and highest qualified groups. In just over half of the cities (six) surveyed, the heads of department of respondents were reported to be mostly men, while five cities they were responded to be mostly women. Male respondents were most likely to be working in national agencies and the food and beverage industry, whereas women surveyed were more likely to be working in regional agencies, tourism agencies and the not for profit sector.

Figure 53: Level of education among tourism workers, by gender

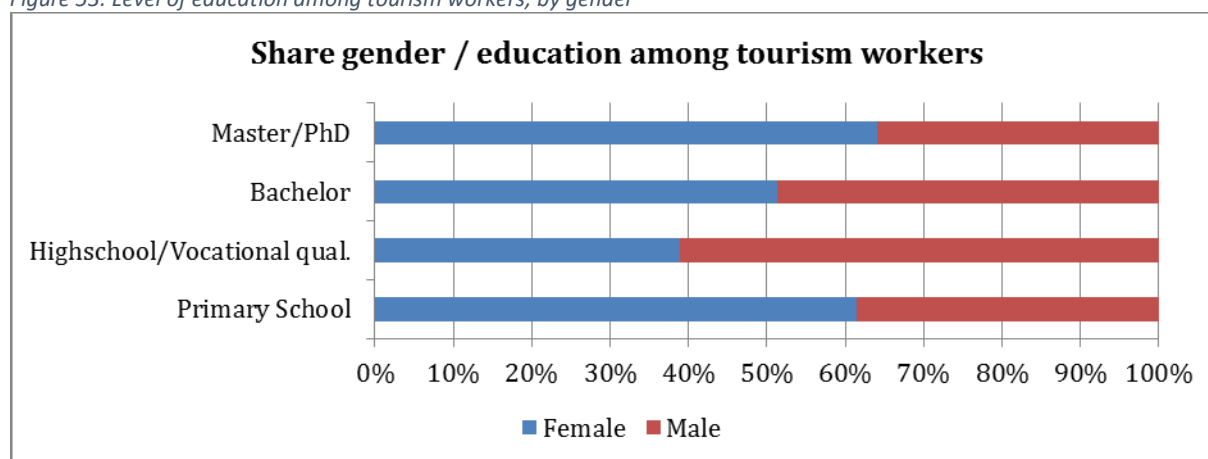




Figure 54: Gender share of head of surveyed departments in tourism industry

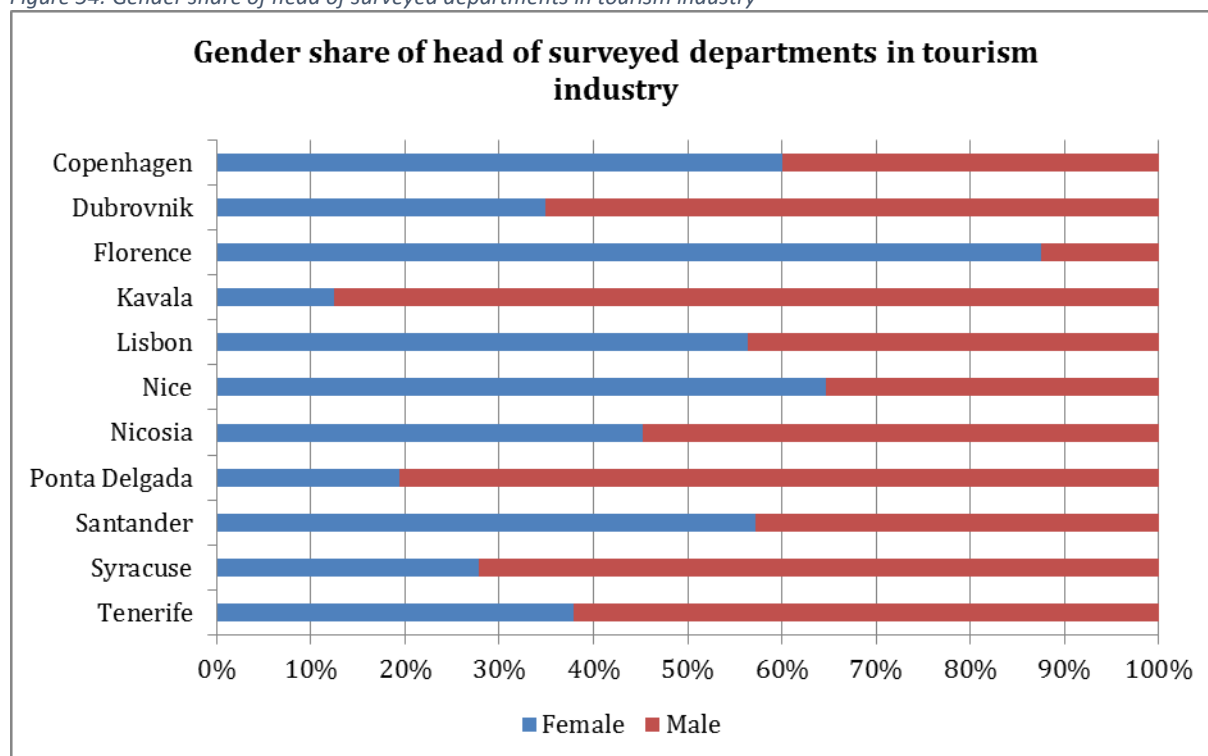
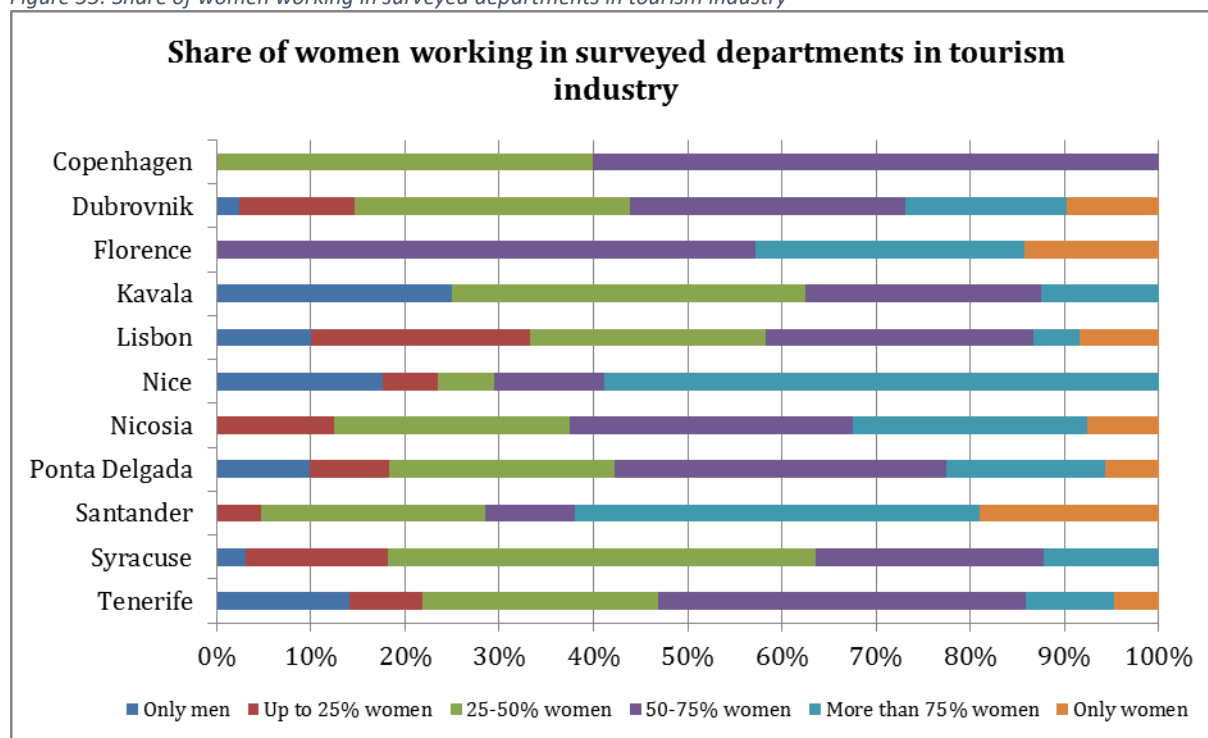




Figure 55: Share of women working in surveyed departments in tourism industry





- “In which kind of organization are you working?”*

Figure 56: Share of the respondents' gender in their organization

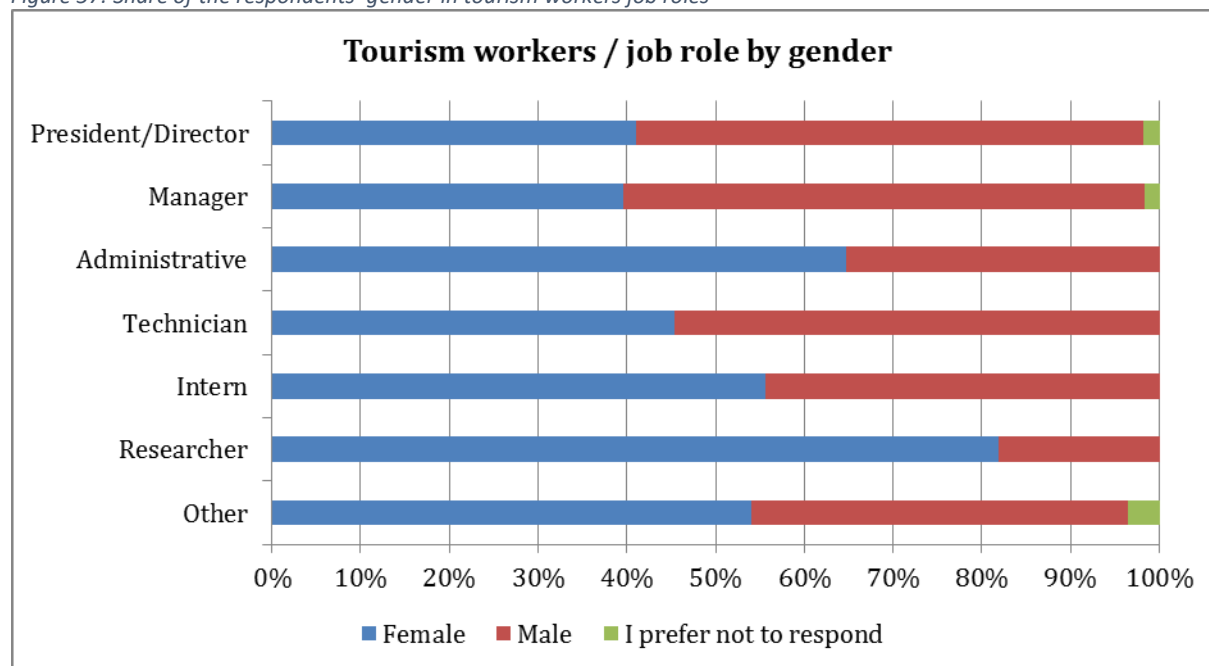


*Multiple responses possible.



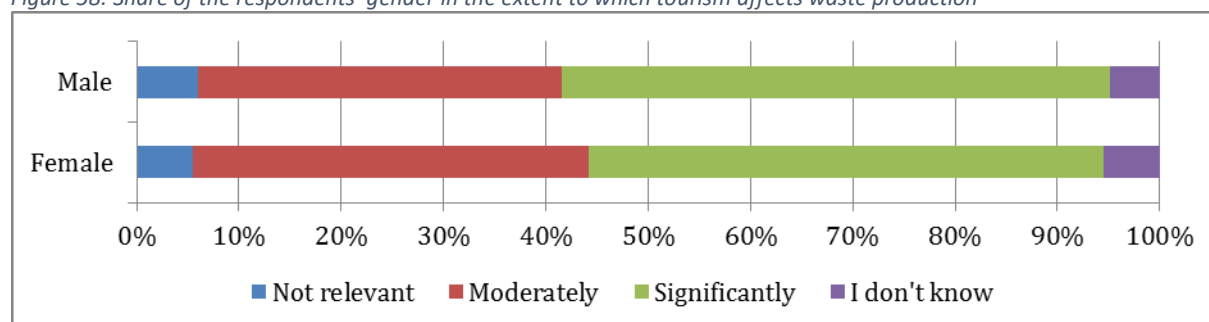
- “What is your job role?”

Figure 57: Share of the respondents' gender in tourism workers job roles



- “To what extent do you believe tourism affects waste production in your city/region?”

Figure 58: Share of the respondents' gender in the extent to which tourism affects waste production



With regard to how tourism affects waste, male respondents were marginally more likely to consider tourism as not relevant. There are only very small, and not consistent, differences in how women working in the tourism sector view their municipality's performance on waste management, and there was a slightly greater propensity for women working in the tourism sector, compared to men, to think that tourists care less about managing their waste when on holiday. There are only very small, and not consistent, differences in how women working in the tourism sector view their municipality's performance on waste management, but it is interesting that the greatest difference occurs in awareness raising and education, where women respondents are more negative than men.



- “How do you consider your municipality/region is performing in the following waste prevention/management activities?”

Figure 59: Share of the respondents' gender in waste collection and sorting performance

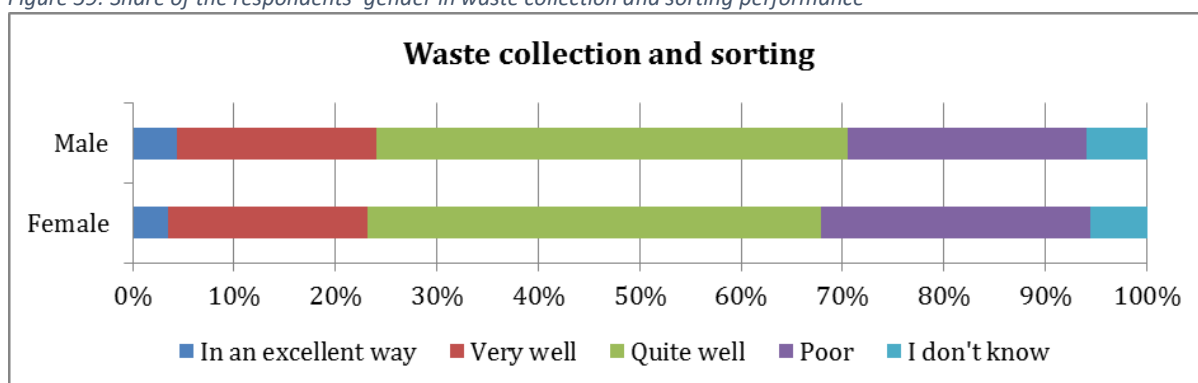


Figure 60: Share of the respondents' gender in waste reduction and reuse

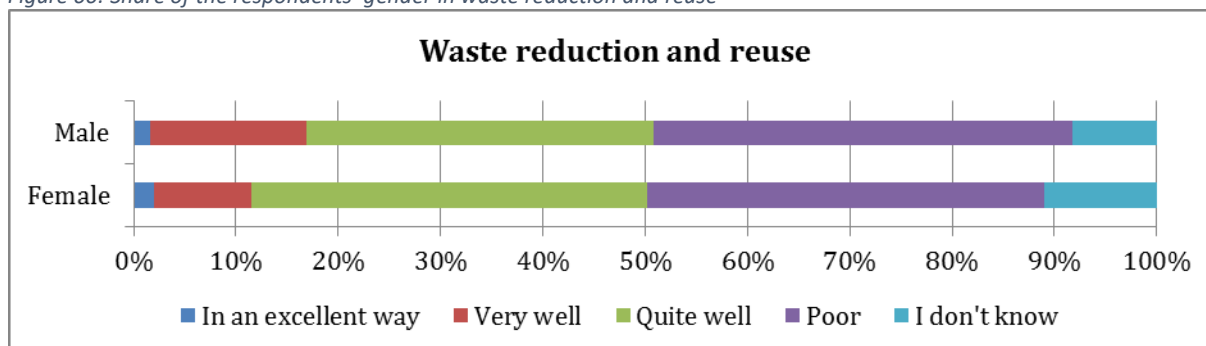


Figure 61: Share of the respondents' gender in waste treatment and final disposal

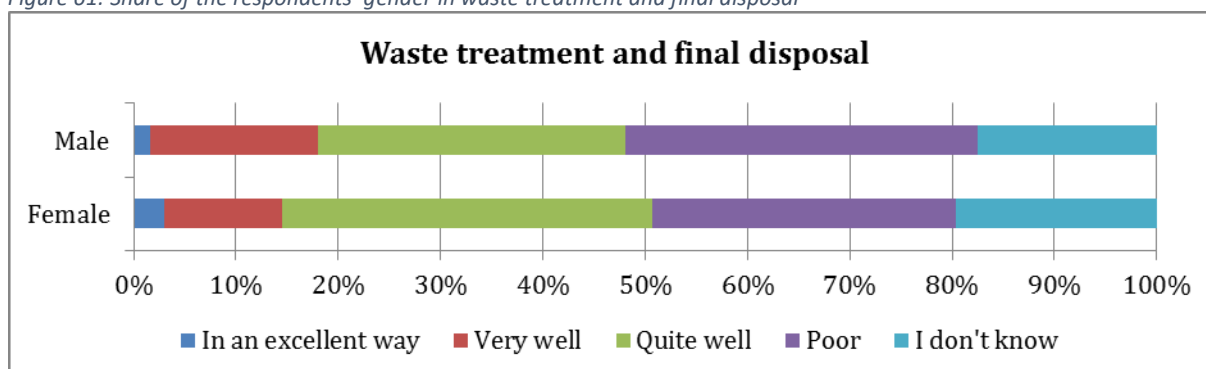




Figure 62: Share of the respondents' gender in awareness raising campaign on waste

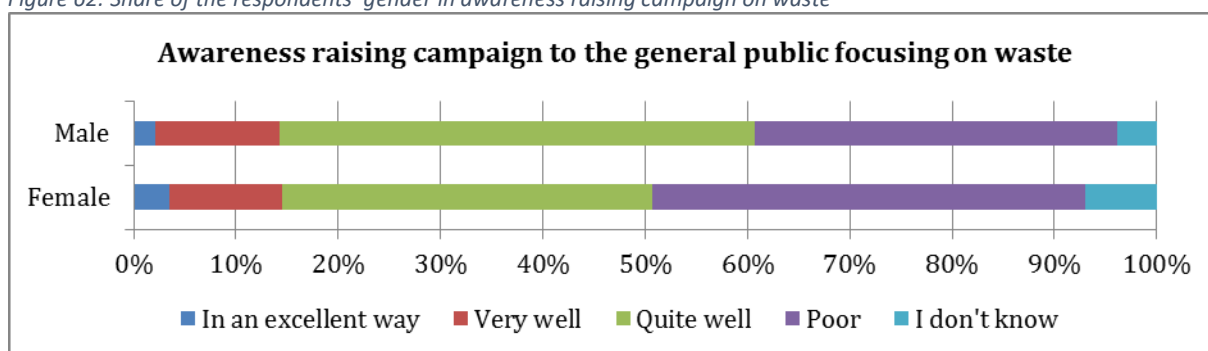
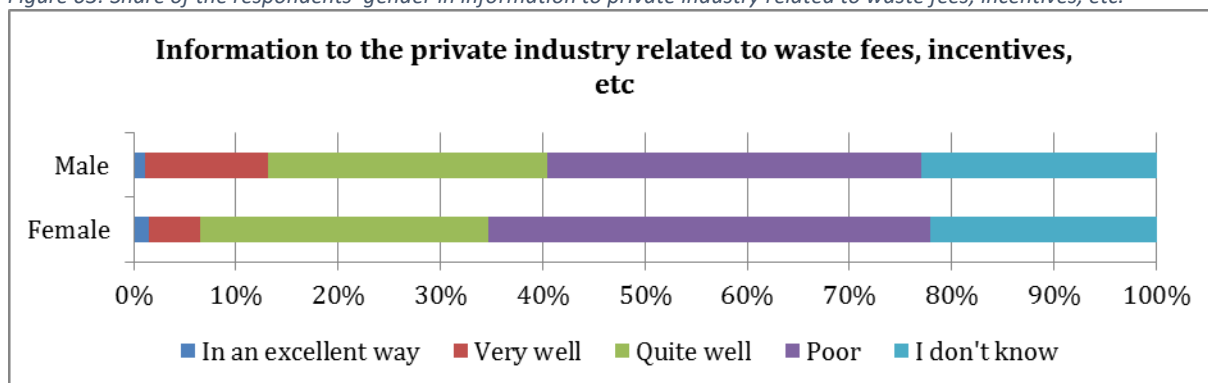
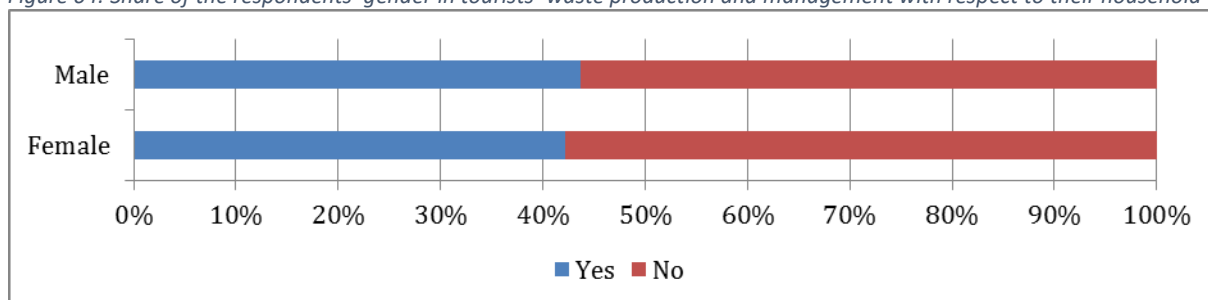


Figure 63: Share of the respondents' gender in information to private industry related to waste fees, incentives, etc.



- “When travelling, do you think tourists care about waste production and management as they do in their own households?”

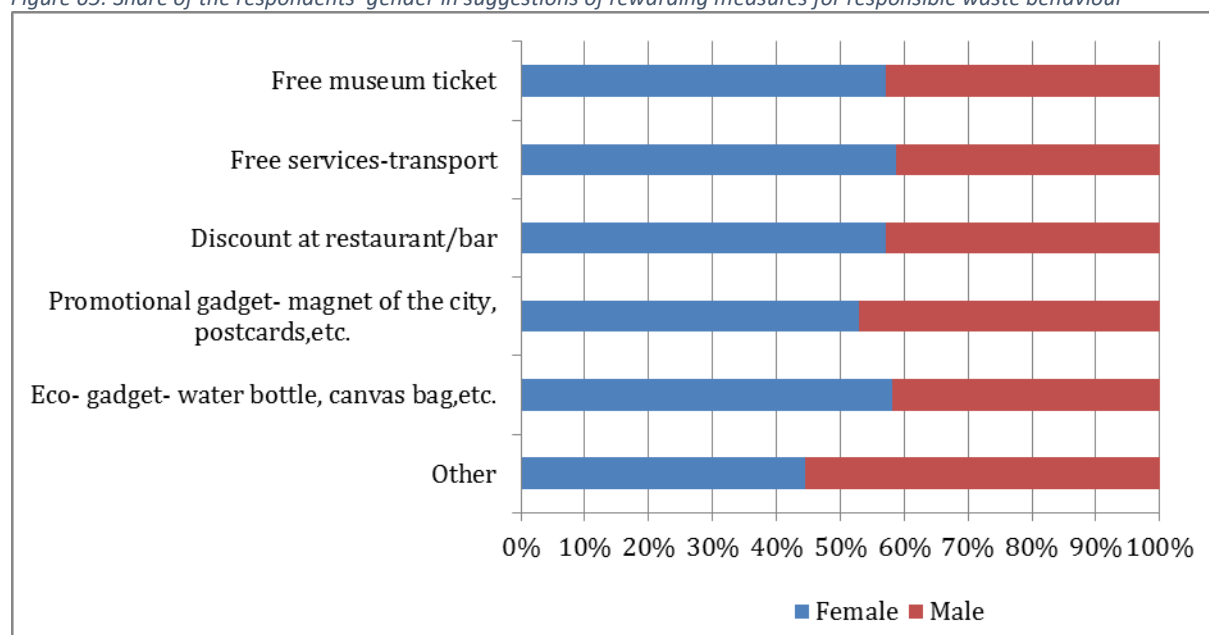
Figure 64: Share of the respondents' gender in tourists' waste production and management with respect to their household





- “If visitors were to be rewarded for more responsible waste behaviour when staying in your city, which of the following options would you suggest?” (multiple response possible)

Figure 65: Share of the respondents' gender in suggestions of rewarding measures for responsible waste behaviour



Women working in the tourist industry are more enthusiastic than men regarding the provision of named rewards for responsible waste behaviour. Men in the industry were only a majority in the unspecified category.

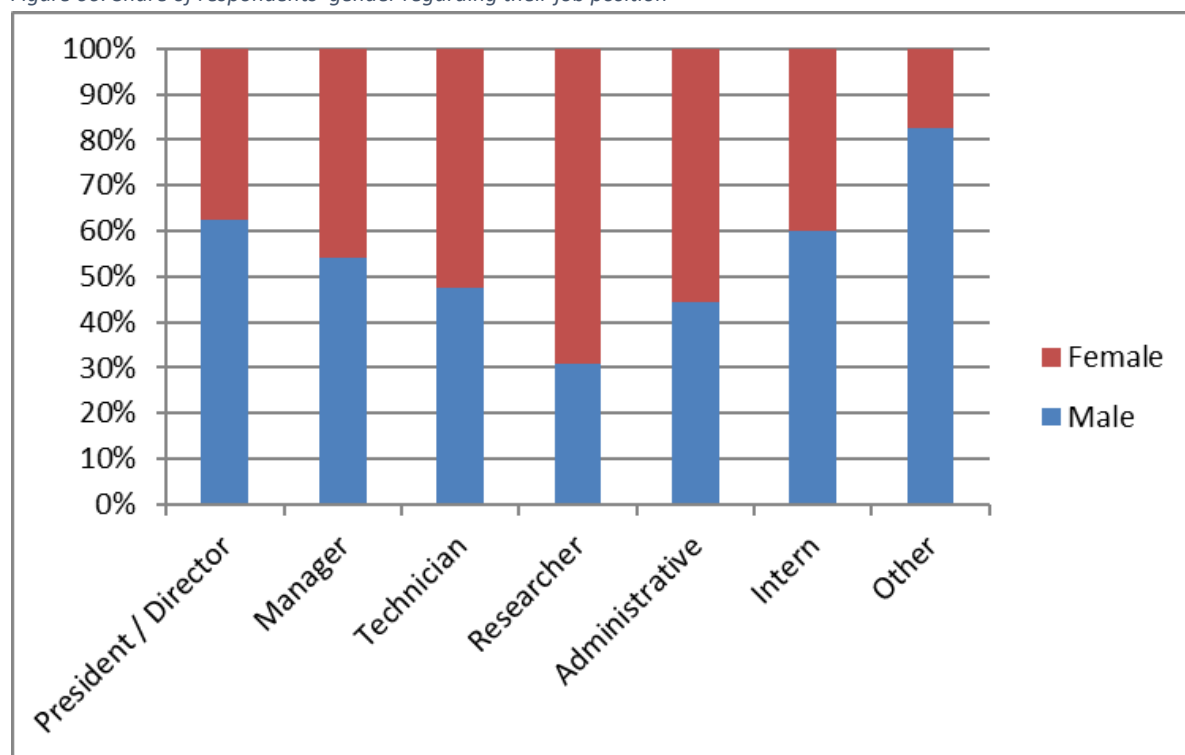
4.3.2 Waste workers

The IMF estimate that in 2016 the ‘female share of employment’ in ‘Water supply, sewage, waste management and remediation’ in Europe was 0.24. In an analysis of 2 million firms it correlates positive financial performance and critical and creative thinking in firms with a higher percentage of women. The UK Commission for Employment and Skills (UKCES), 2010 (covering energy and utilities activities) is sufficiently concerned about the gender imbalance it has recorded in the sector that it considers the water supply, sewage, waste management and remediation to be an area of ‘criticality’ which needs to widen the diversity of the workforce to stimulate sustainable development thinking. This gendered workforce was reflected in the departments for which respondents to our survey worked (see figure 67), where almost three quarters were run by men, and departments in which there were no women were three times more likely than departments in which there were no men. Male dominated departments were also reported as more common.



- What is your job position?

Figure 66: Share of respondents' gender regarding their job position

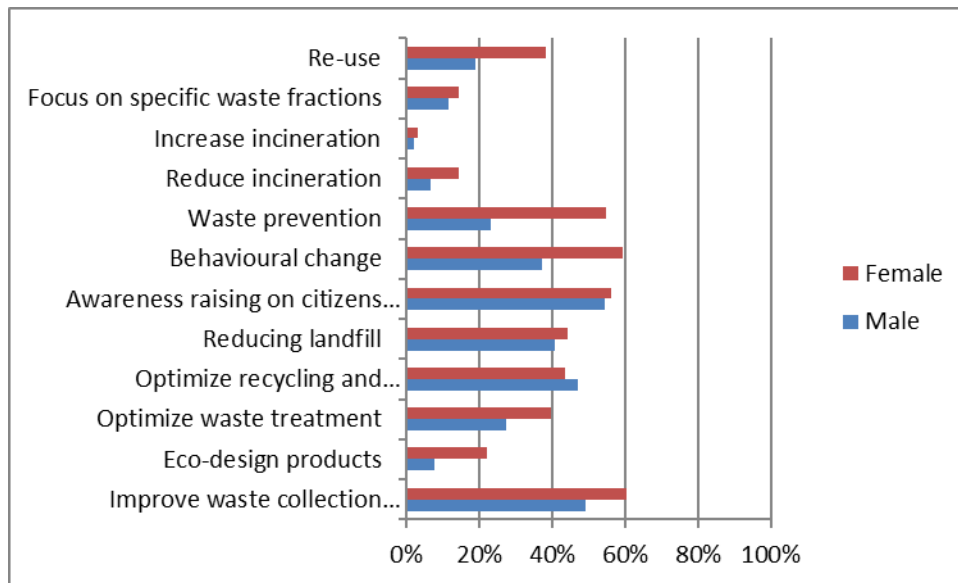


Regarding views of waste behaviour, some gender differences can be noted. The top four priorities for women are, in order of importance, improving waste collection, behaviour change, awareness raising and waste prevention. Men shared the top two priorities, but with a smaller number of responses, followed by the optimisation of recycling and the reduction of landfill. Three of the top four of women's priorities, therefore, are linked to behaviour change, contrasted to three of men's top four being operational. We might, then, consider a benefit of gender balanced teams to be the potential to deliver a broader mix of policies. However, there was no noticeable difference between what male and female waste management respondents believed influenced people's behaviour.



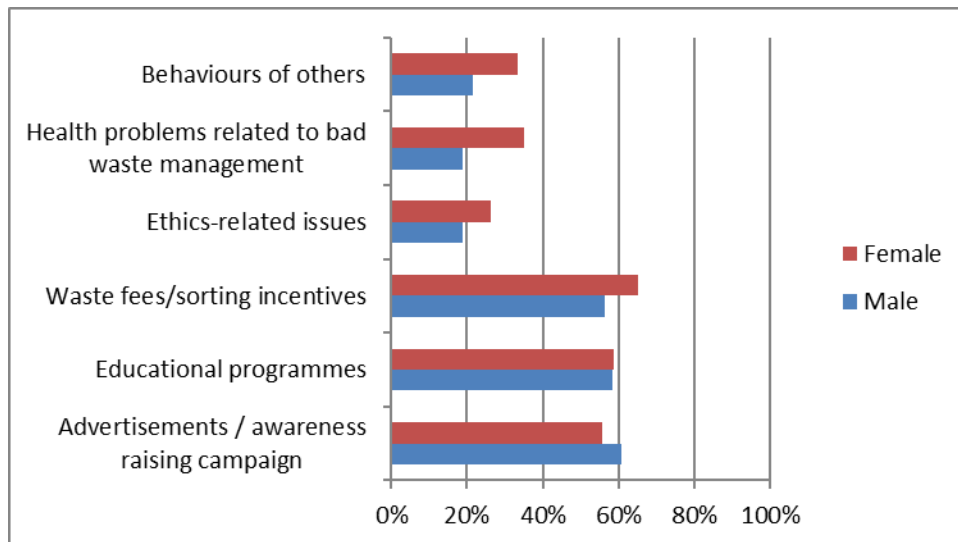
- What are waste management priorities in your opinion?

Figure 67 Share of respondents' gender related to their waste management priorities



- What do you think influences people most with regard to waste management and production issues?

Figure 68: Share of the respondents' gender in defining incentives to behavioural change



4.3.3 Tourists

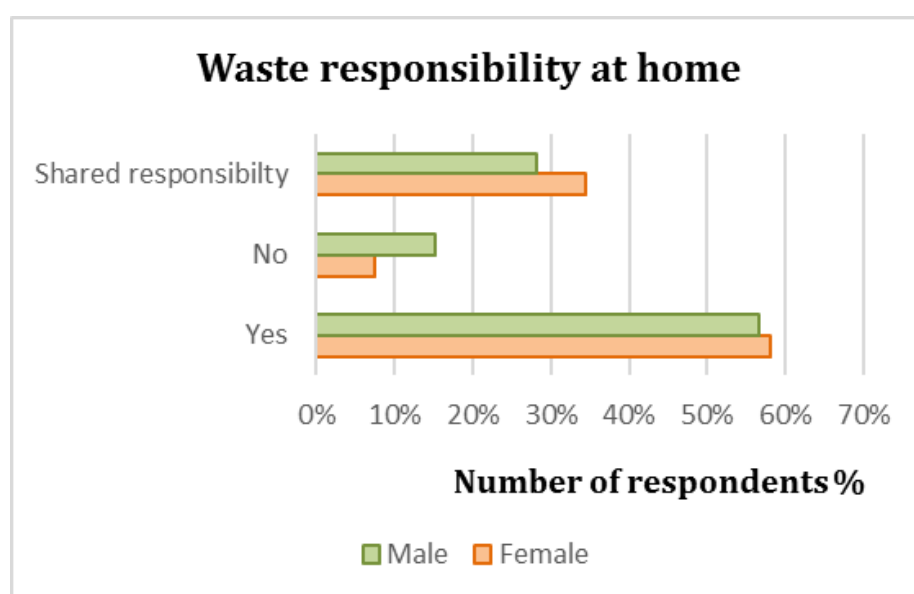
In line with published surveys, a slightly higher proportion of women than men stated that they took full responsibility for managing waste at home, or shared responsibility with other household members, whereas almost double the percentage of men to women stated that they did not take any responsibility for waste at home. Both male and female respondents reported, however, that they always or often recycled waste, with



men more likely to state that they do so always. While on holiday a similar proportion of men and women (5%) reported that they were more likely to dispose of waste responsibly, whereas more men than women said that they were less likely to do so. More men than women said that their waste behaviour when on holiday was the same as at home.

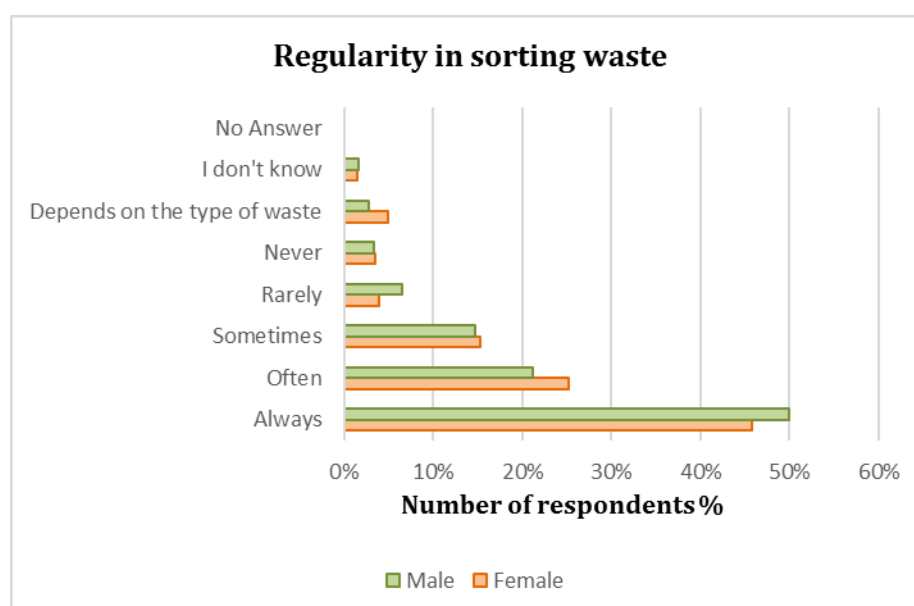
- Are you responsible for the management of your waste in your household?

Figure 69: Share of the respondents' gender being responsible for waste at home



Please rate the regularity in sorting household wastes at your place

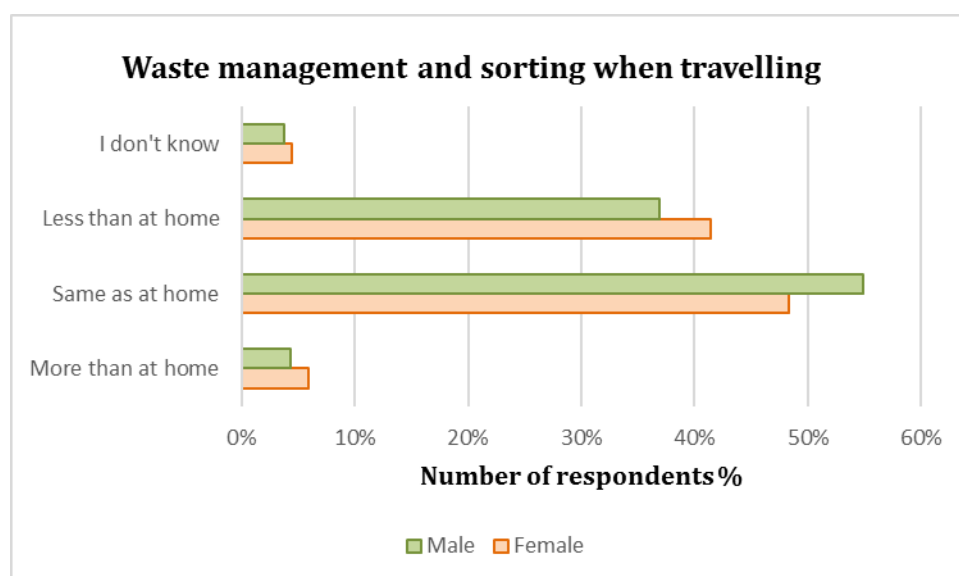
Figure 70: Share of the respondents' gender who sorts waste regularly





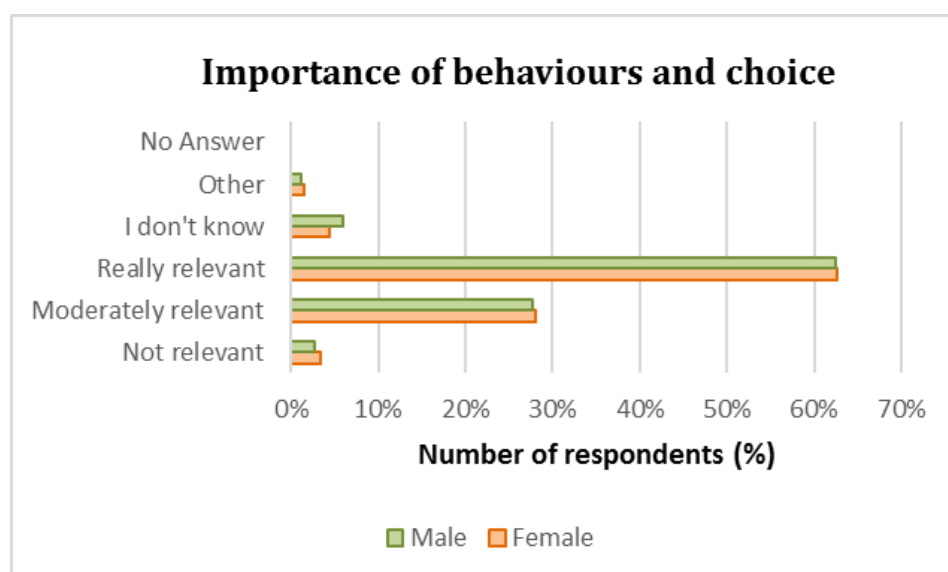
- When travelling, do you take care about your waste management/sorting as you do at home?

Figure 71: Share of the respondents' gender in waste management and sorting when travelling



- To what extent do you consider individual behaviours and choices relevant in terms of waste production?

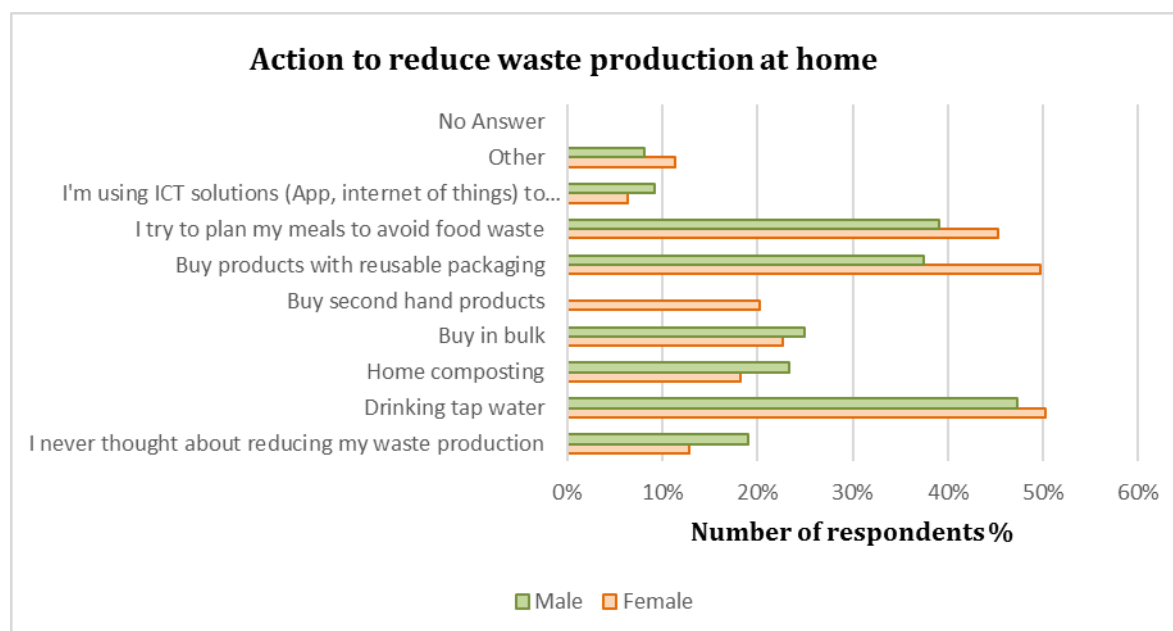
Figure 72: Share of the respondents' gender evaluating the importance of behaviours and choice





- If relevant, please tick the actions you do at home to reduce your waste production

Figure 73: Share of the respondents' gender taking actions to reduce waste production at home

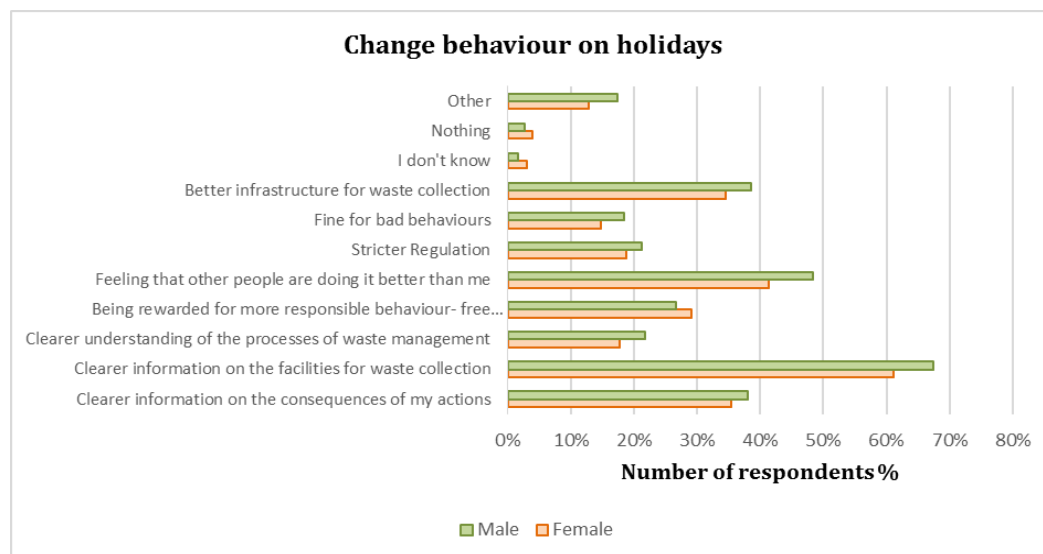


Of the seven named actions identified on the survey, women were more likely than men to take action on four, with the largest differences recorded for buying products with reusable packaging (over 10 percentage points difference), buying second hand products (which no male respondent admitted), and avoiding food waste (over 5 percentage points). Women were also more likely to take other unspecified action. Men were more likely to use ICT solutions, to compost, or to buy in bulk. They were also more likely not to have thought about reducing their waste production before participating in the survey.



- Which of the following factors would contribute to change your behaviour during your travels

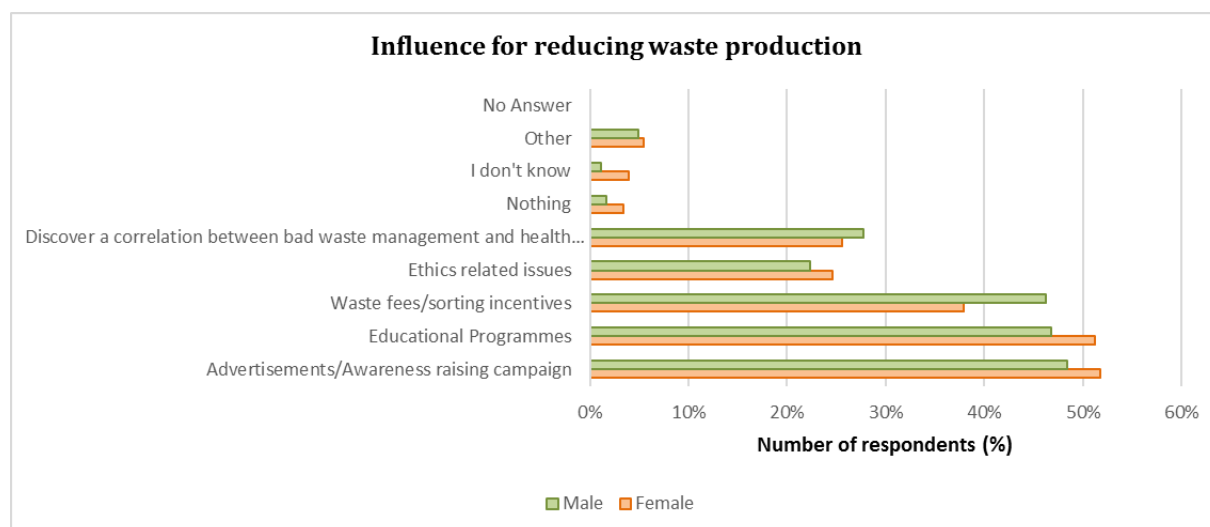
Figure 74: Share of the respondents' gender in the incentives influencing waste behaviour on holidays



Both women and men were most likely to cite clearer information on waste collection facilities, a feeling that other people are managing waste better, better waste collection infrastructure, and clearer information on the consequences of their actions as the main incentives that could help them change their waste behaviour on holiday. In all four cases, men were more likely to opt for each action than women. The only incentive for which women recorded more responses was rewards for responsible waste behaviour.

- What could influence you more to reduce your waste production?

Figure 75: Share of the respondents' gender in the factors influencing waste production





Women were more likely to be influenced to reduce their waste production by education, awareness raising campaigns, and ethical issues, but less likely than men to be incentivized by financial strategies or health concerns. Nonetheless, the order of importance of each of the incentives is similar for men and women.

- Please rank the following criteria (from 1 to 6) considering their importance in choosing your hotel/accommodation when you travel

Figure 76: Share of the respondents' gender on the relevance of different criteria for choosing the accommodation: Price

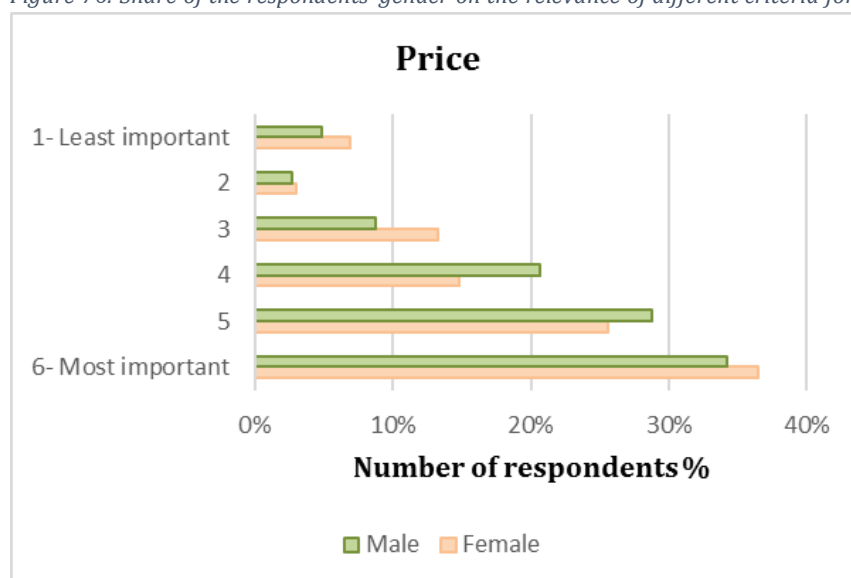


Figure 77: Share of the respondents' gender on the relevance of different criteria for choosing the accommodation: Location

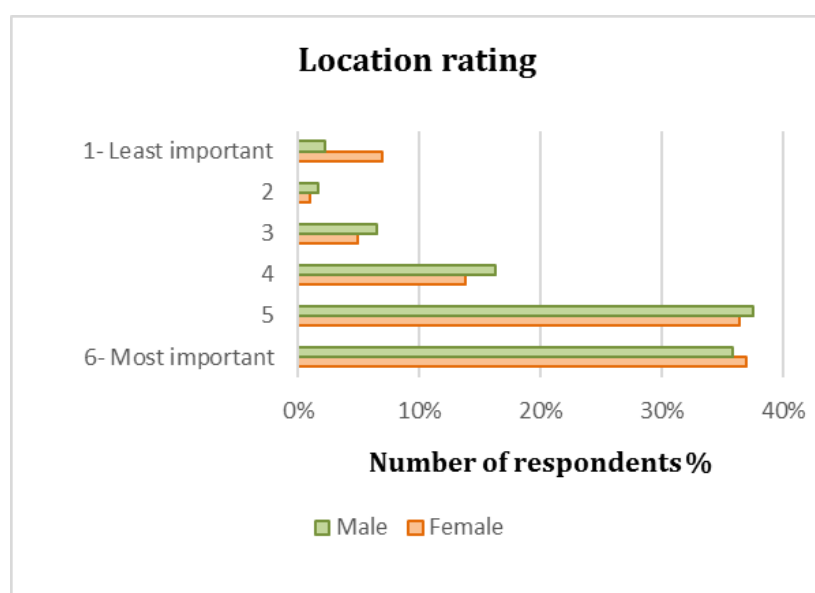




Figure 78: Share of the respondents' gender on the relevance of different criteria for choosing the accommodation: Environmental awareness

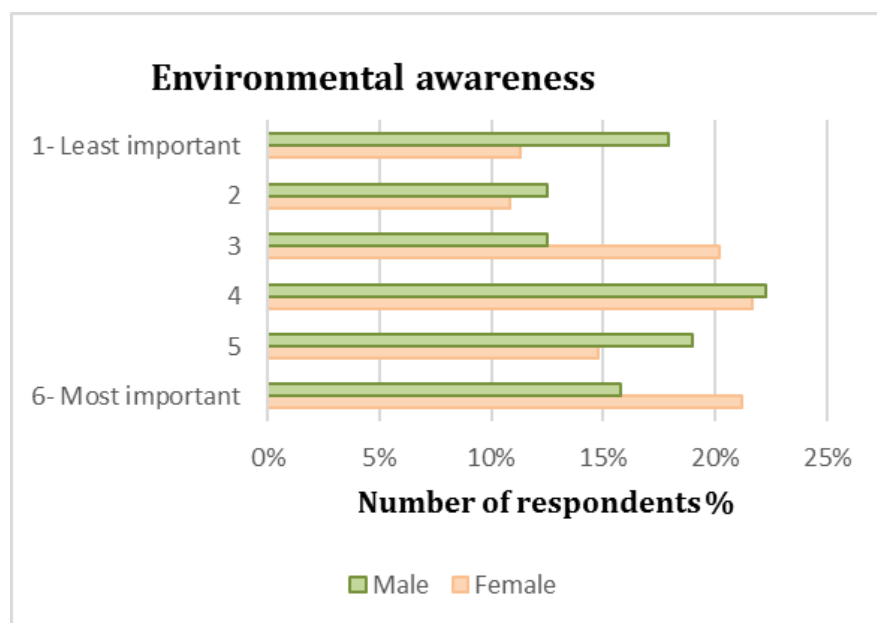


Figure 79: Share of the respondents' gender on the relevance of different criteria for choosing the accommodation: Hotel rating

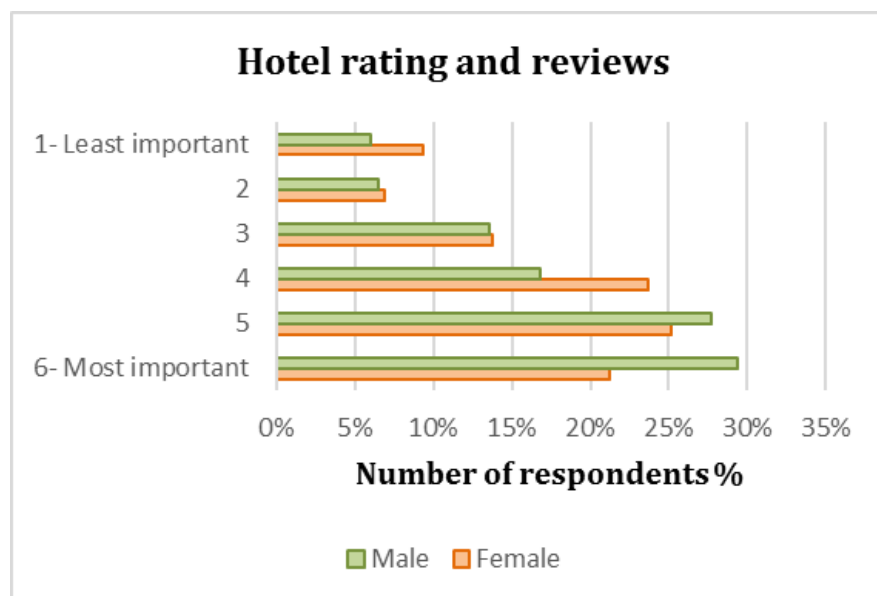




Figure 80: Share of the respondents' gender on the relevance of different criteria for choosing the accommodation: Leisure activities

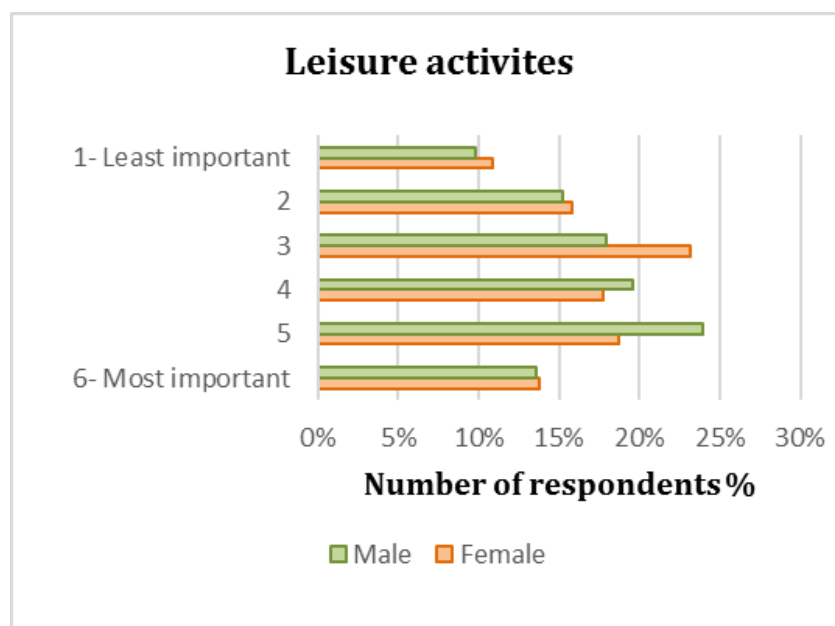
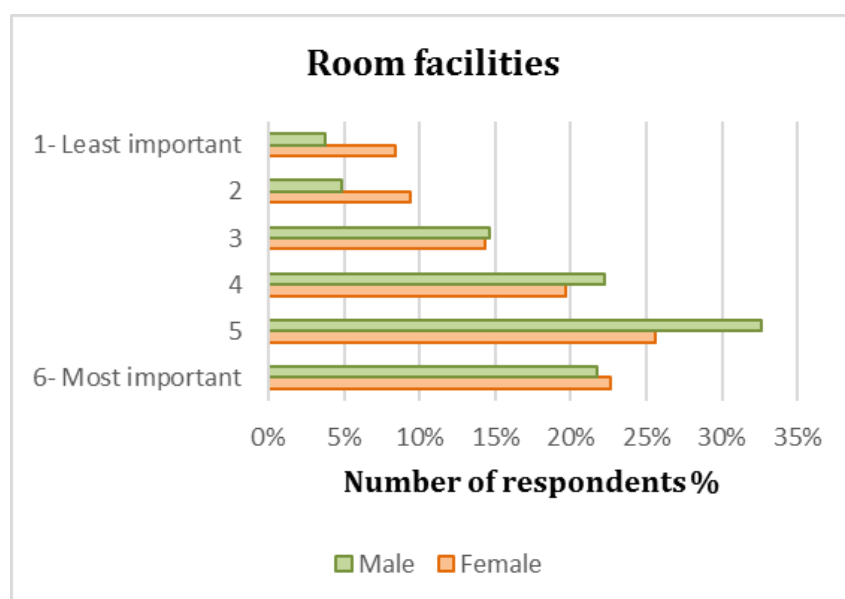


Figure 81: Share of the respondents' gender on the relevance of different criteria for choosing the accommodation: Room facilities



The most pronounced difference between influences on men and women's decision on holiday accommodation was on its environmental awareness. Women tourists were more likely to cite the environmental awareness of holiday accommodation to be a decisive factor in booking, with women more likely to say this was the most important factor. For men, it was more likely to be the least important factor, whereas hotel ratings and leisure



activities were seen to be favoured more by men than women. Price, room facilities and location were ranked highly by both men and women.

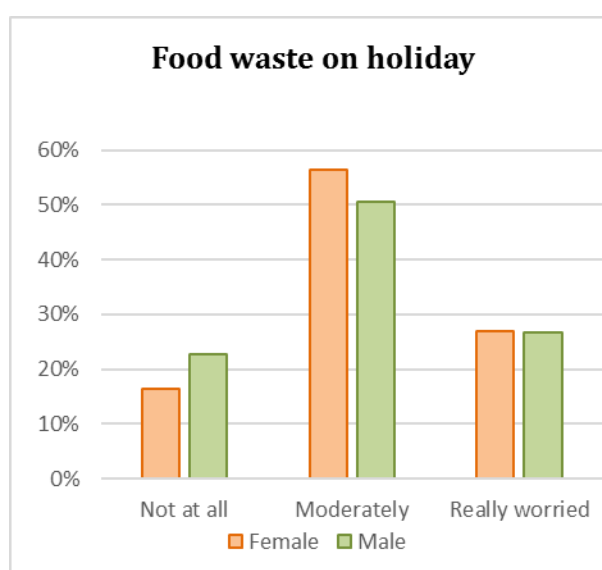
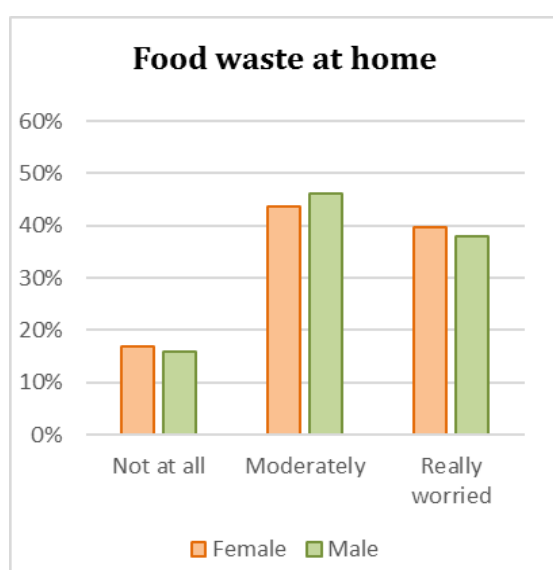
- To what extent do you believe tourism affects waste production in the city you are visiting?

Figure 82: Share of the respondents' gender in the extent to which tourism affects waste production



- How worried are you about food waste at home and on holiday?

Figure 83-84: Share of the respondents' gender worried about food waste on holiday



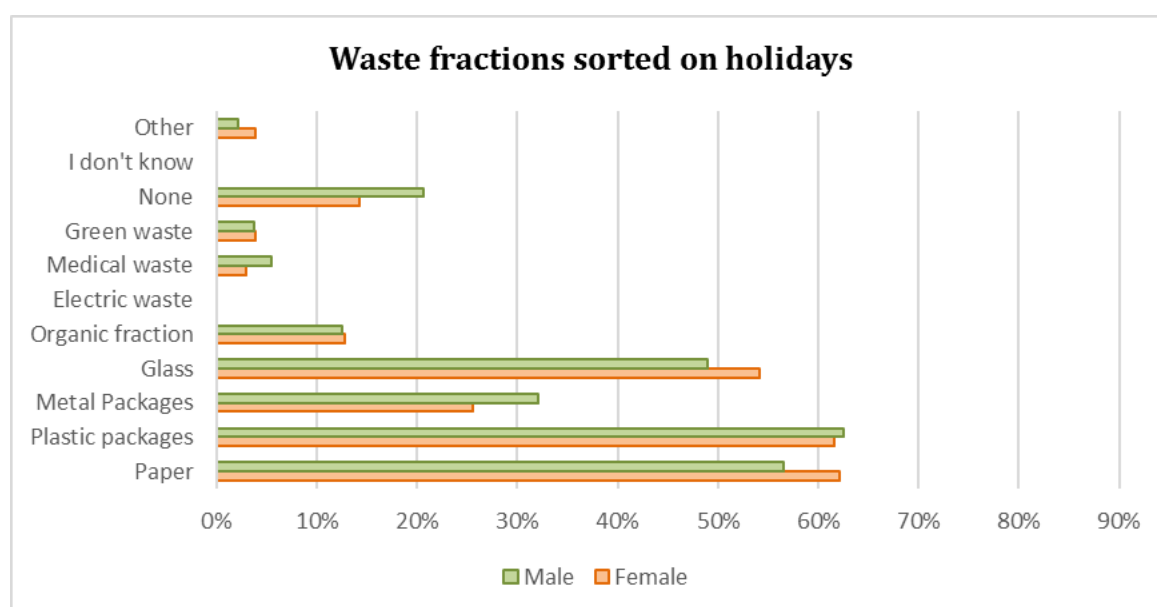
There does not appear to be a difference between men and women's concern about food waste, with slightly more women than men reporting moderate concern about food waste on holiday, and reporting real worry



about food waste at home. Women were marginally more likely to think that tourism significantly affects waste production.

- What waste fractions did you sort/are you sorting during your holidays?

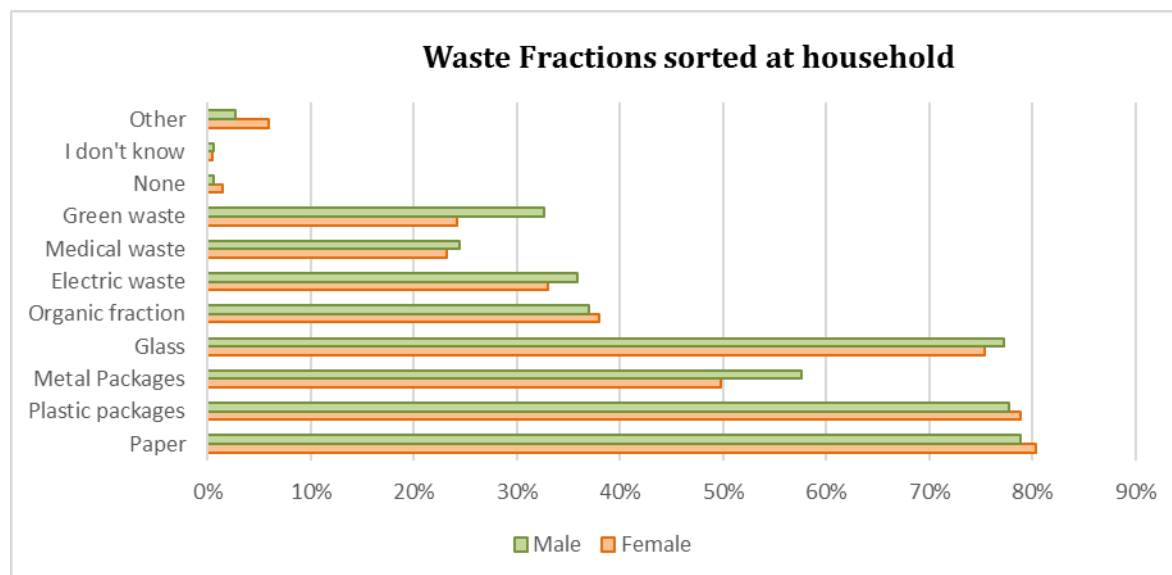
Figure 85: Share of the respondents' gender in recycling different types of fractions on holiday



- What waste fractions did you sort/are you sorting at your household?



Figure 86: Share of the respondents' gender in recycling different types of fractions at household

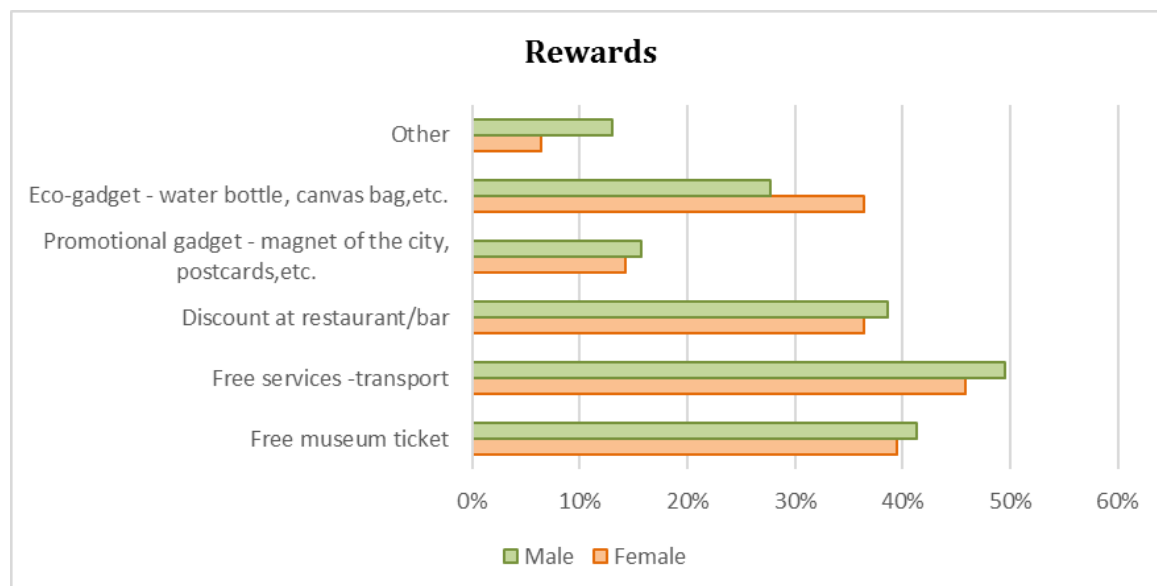


Consistent with waste management results presented above, just over twenty percent of men respondents reported that they were less likely than women to sort their waste when on holiday. Of those who do sort their waste, men were more likely than women to sort plastic and metal, whereas women were most likely to sort paper, glass, organic material, green waste and unspecified other fractions. Interestingly, this was a different pattern to household waste sorting behaviour where higher rates were recorded for men in green waste (but not organic), glass, electrical, medical and metal; and for women in organic, paper, plastic and unspecified other.

- If you were to be rewarded for your good waste behaviour when on holidays, which of the following options would you prefer?



Figure 87: Share of the respondents' gender considering rewards effective



Rewards appear to be more attractive to men than women, apart from useful artefacts. Men were more likely to cite financial incentives such as free services and discounts.



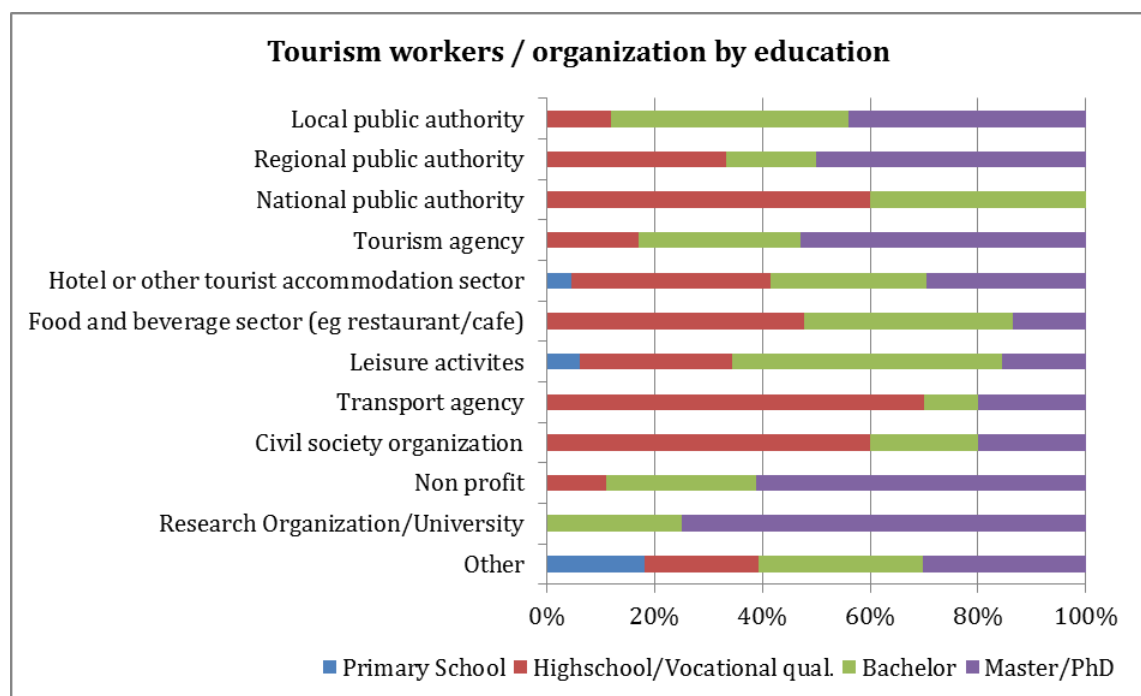
4.4 Educational background analysis

Concerning the educational background, we will take in consideration just selected questions related with waste workers and tourism industry, since a deeper and more careful analysis of these data concerning tourists will be provided in a second step.

4.4.1 Tourism workers

- In which kind of organization are you working?

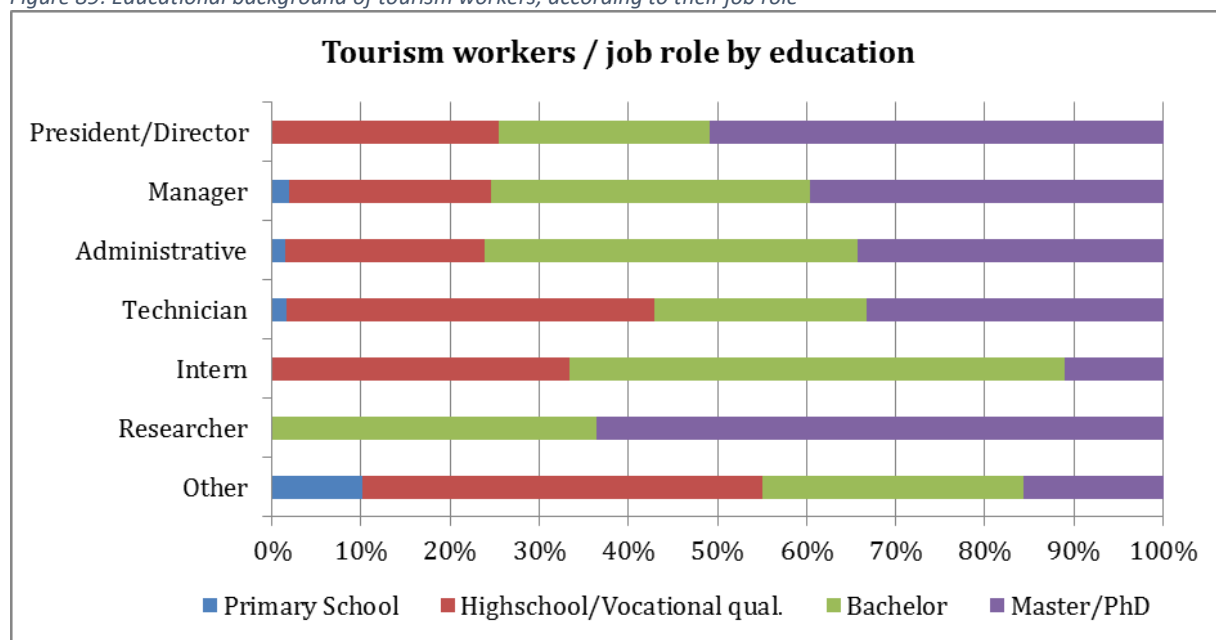
Figure 88: Educational background of tourism workers according to their organizations. Multiple responses possible





- What is your job role?

Figure 89: Educational background of tourism workers, according to their job role

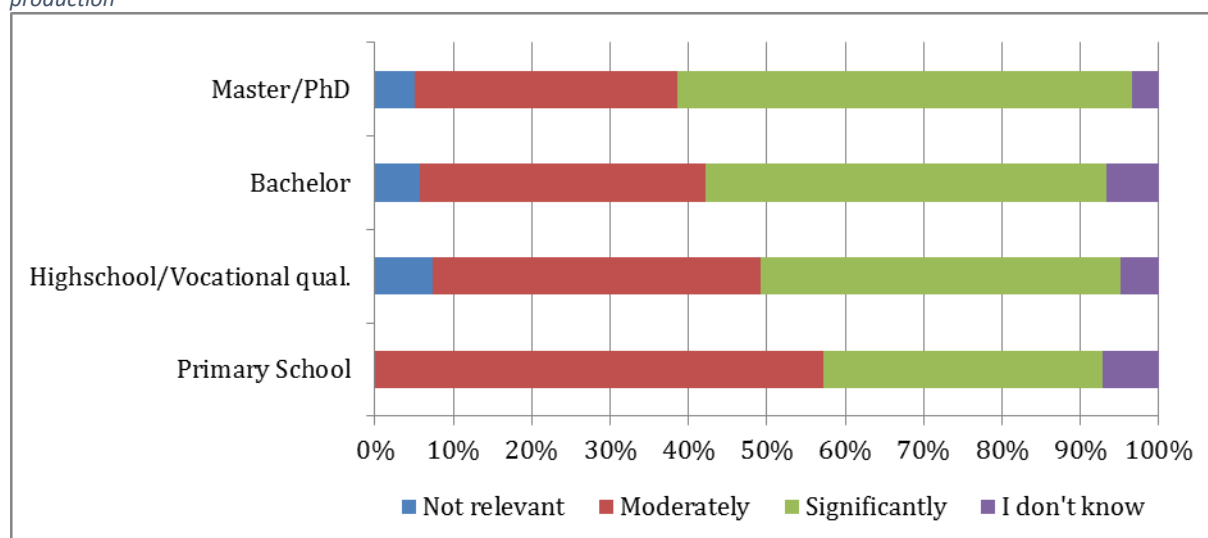


Apart from – obviously – staff from research institutions or non-profit organizations, the majority of the tourist workers has a Highschool/Vocational education or a Bachelor education. A similar distribution applies also when looking at their job roles, with of course a certain parallelism between higher positions and higher education.

- To what extent do you believe tourism affects waste production in your city/region?



Figure 90: Relevance of the respondents' educational background in assessing the importance of tourism affecting waste production



- How do you consider your municipality/region is performing in the following waste prevention/management activities?

Figure 91: Relevance of the respondents' educational background in assessing the performance of their municipality/region in waste collection and sorting





Figure 92: Relevance of the respondents' educational background in assessing the performance of their municipality/region in waste reduction and reuse

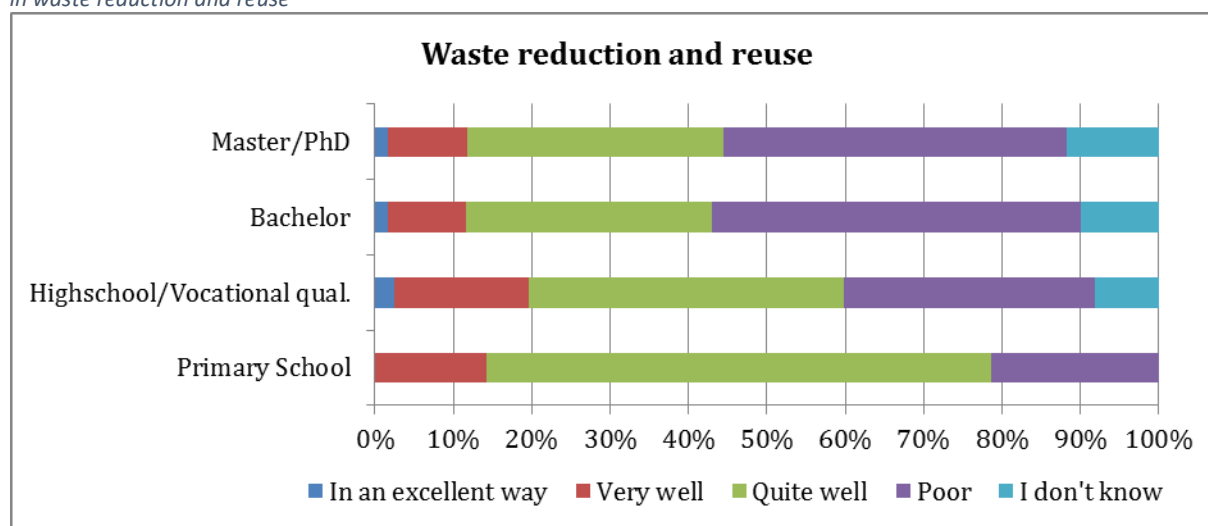


Figure 93: Relevance of the respondents' educational background in assessing the performance of their municipality/region in waste treatment and final disposal

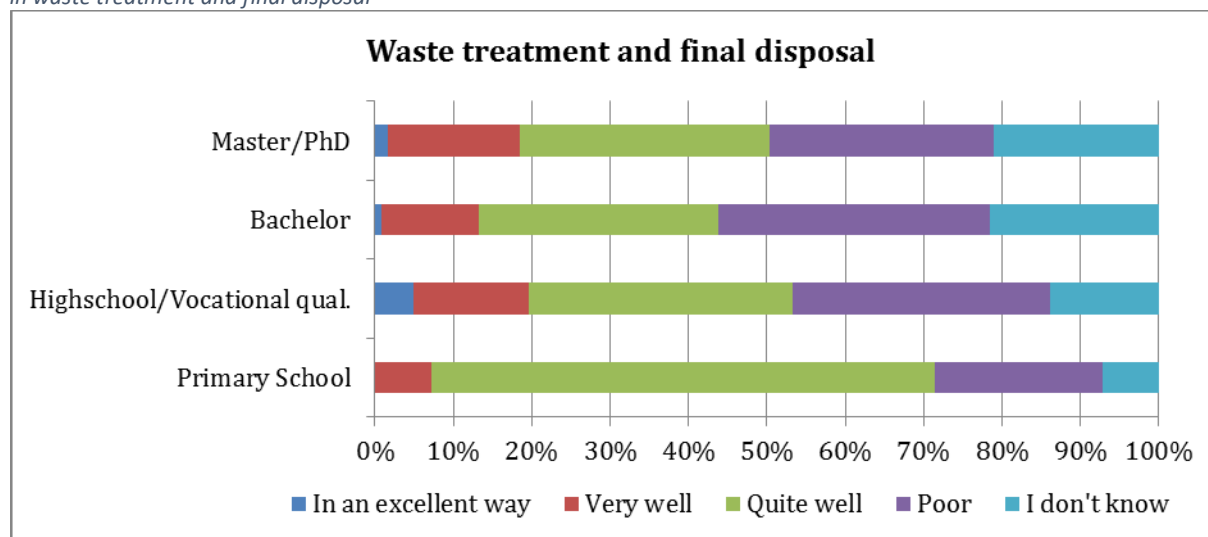




Figure 94: Relevance of the respondents' educational background in assessing the performance of their municipality/region in awareness raising campaign focused on waste

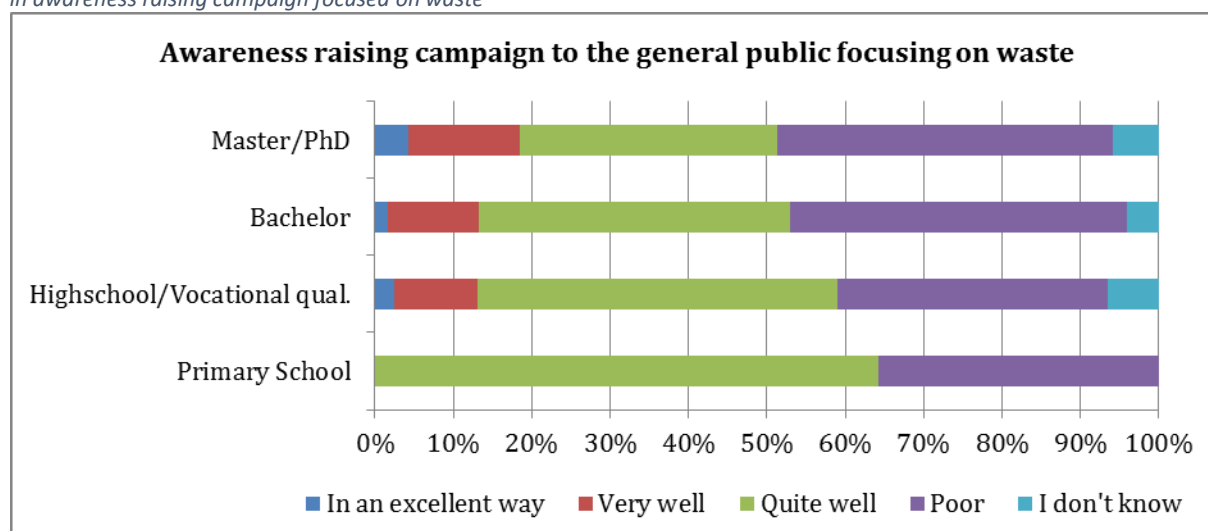
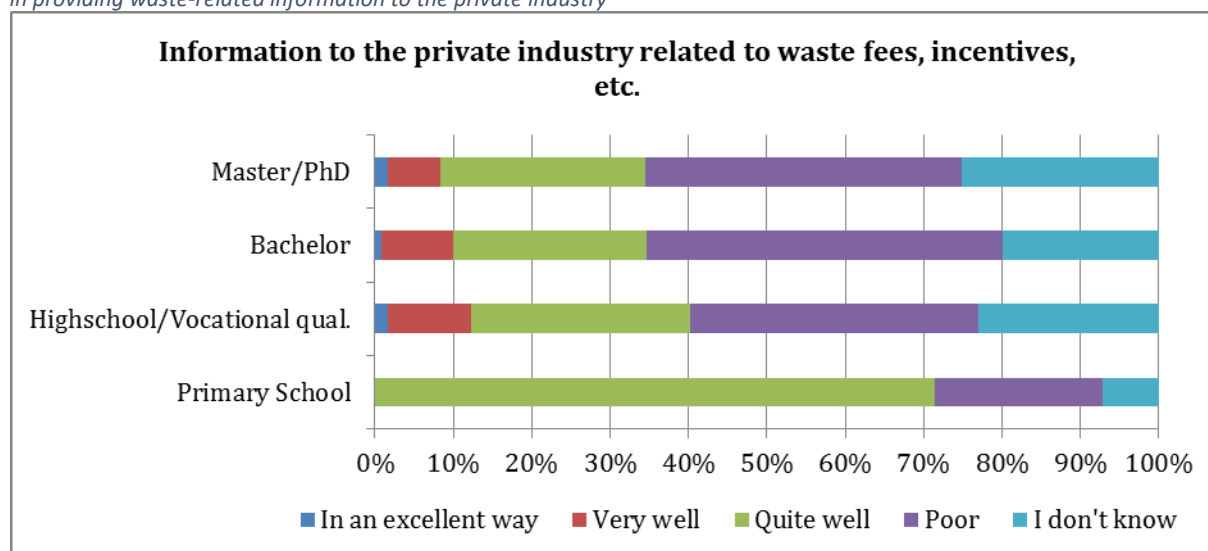


Figure 95: Relevance of the respondents' educational background in assessing the performance of their municipality/region in providing waste-related information to the private industry



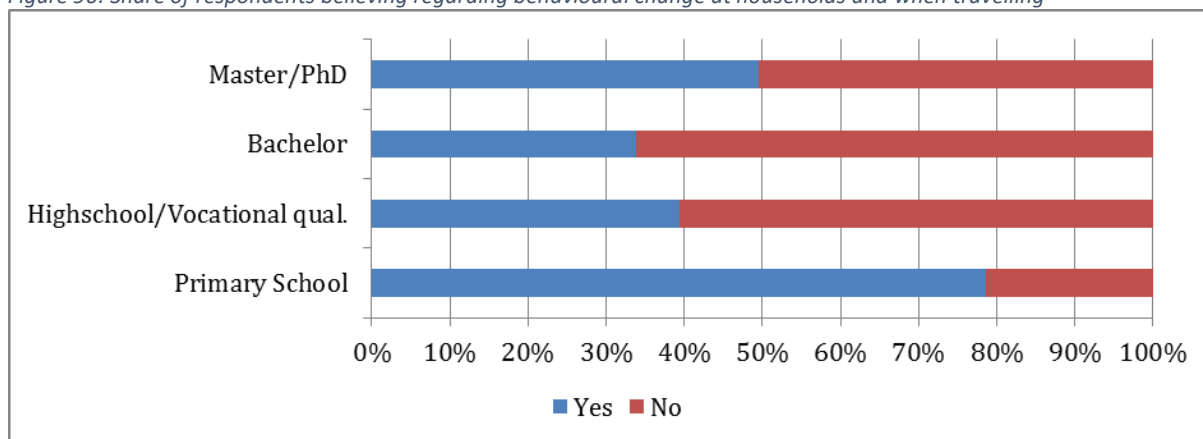
To look at the perception of waste prevention actions by education reveals interestingly that apparently satisfaction increases with lower education level in all categories.

This finding is interesting to interpret with the final graph, which reveals that people with only primary school education consider tourists to care much about waste prevention on holidays, possibly the correlates with their higher satisfaction?



- “4.2 When travelling, do you think tourists care about waste production and management as they do in their own households?”

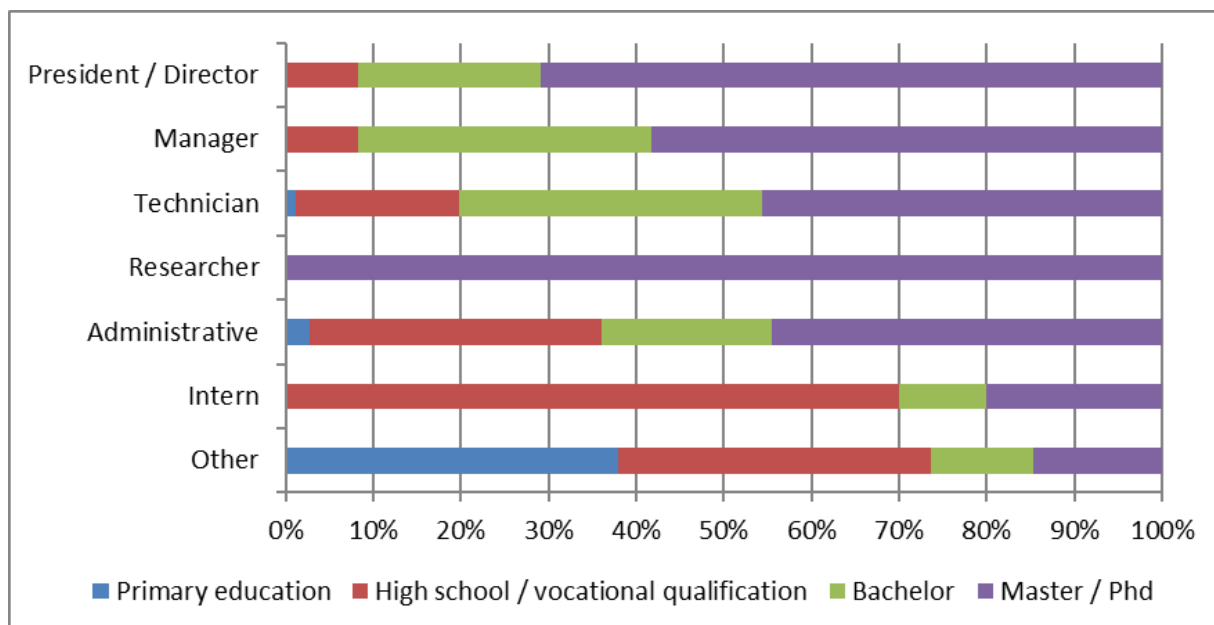
Figure 96: Share of respondents believing regarding behavioural change at households and when travelling



4.4.1 Waste Workers

- What is your job role?

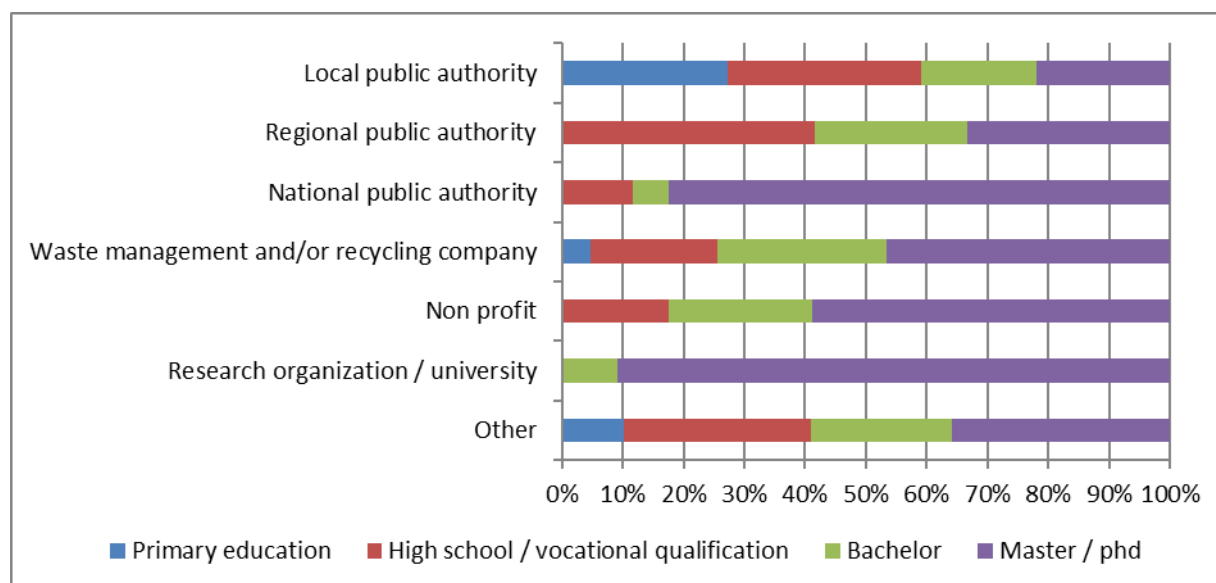
Figure 97: Share of respondents' educational backgrounds job position





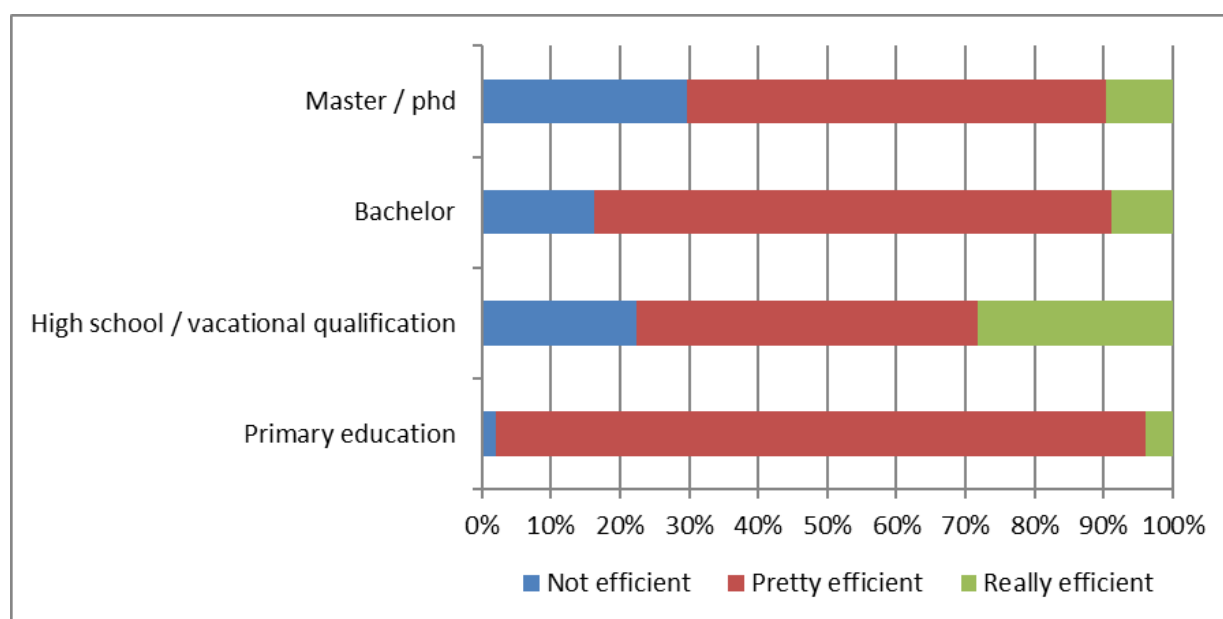
- In which kind of organization are you working?

Figure 97: Share of respondents' educational backgrounds in relation with the organization where they work



- How would you rate waste management efficiency in your city/region?

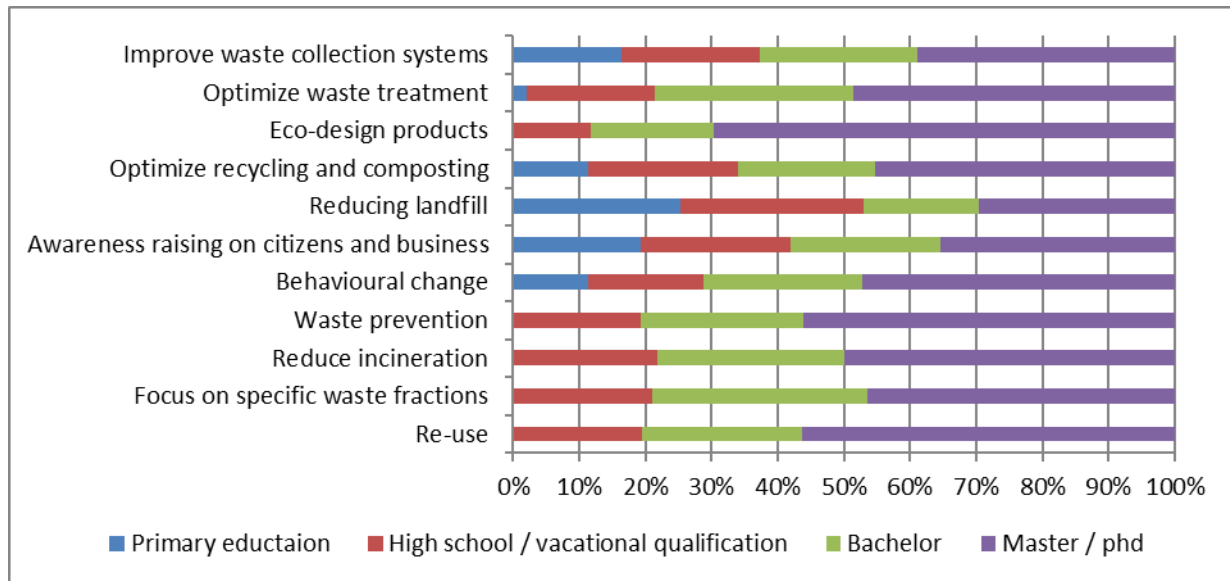
Figure 97: Share of respondents' educational backgrounds in relation with the level of efficiency of the waste management system





- What are waste management priorities in your opinion?

Figure 98: Share of respondents' educational backgrounds in relation with waste management priorities identified



4.4.2 Tourists

- Concerning the tourists, a much deeper and more detailed analysis regarding their personal characteristics will be performed among Month 9 and 12 of the project, in order to crosscut different characteristics (age, country of residence, educational background, gender) and to try to create cluster of respondents to better understand how cultural and gender differences affect tourists' behaviour in relation with waste.



Annexes

ANNEX 1 – Tourism workers



URBANWASTE Tourism workers

Fields marked with * are mandatory.

The following survey is part of the research activity conducted in the framework of URBANWASTE project, funded by the H2020 programme of the European Commission. URBANWASTE aims at understanding how tourism-related activities influence waste generation and management in 11 pilot cases around Europe. To do so, on one side, the project will perform a metabolic analysis, quantifying the flow of materials that are entering and leaving a pilot area, and from the other side it will get insights from professionals working in the tourism sector as you. This is the reason why we would really appreciate it if you could answer the following questions. The survey is anonymous and it will not take longer than 10 minutes. You will be able to consult the final results on our website after December 2016.

Thank you in advance for your collaboration!

* 1 Are you working in tourism related activities?

- ☐ Yes
- ☐ No

* 2 In which of the following city/region are you working?

- ☐ Copenhagen
- ☐ Dubrovnik Neretva Region



- ☐ Florence
- ☐ Kavala
- ☐ Lisbon
- ☐ Nice
- ☐ Nicosia
- ☐ Ponta Delgada
- ☐ Santander
- ☐ Syracuse
- ☐ Tenerife
- ☐ Other

* 3 In which kind of organization are you working?

- ☐ Local public authority
- ☐ Regional public authority
- ☐ National public authority
- ☐ Food and beverage sector (eg restaurant/cafe)
- ☐ Non profit
- ☐ Civil society organization
- ☐ Hotel or other tourist accommodation sector
- ☐ Tourism agency
- ☐ Transport agency
- ☐ Leisure activities
- ☐ Research Organization/University ☐ Other

* 4 What is your job role?

- ☐ President/Director
- ☐ Manager
- ☐ Technician
- ☐ Researcher
- ☐ Administrative
- ☐ Intern
- ☐ Other



* 5 Please indicate the percentage of women and men working in your department

- ☐ Only men
☐ Up to 25% women
☐ 25-50% women
☐ 50-75% women
☐ More than 75% women
☐ Only women ☐ I don't

know

* 6 Is your head of department male or female?

- ☐ Male ☐ Female

1 Tourism and waste

* 1.1 In your opinion, how much does tourism contribute to the local economy of your city/region?

- ☐ Not really
☐ Moderately
☐ Significantly
☐ I don't

know ☐

Other

* 1.2 To what extent do you believe tourism affects waste production in your city/region?

- ☐ Significantly
☐ Moderately
☐ Not

relevant

- ☐ I don't



know

1.3 How much do you think tourism affects waste production?

	1. Very Low	2	3	4	5. Very much	I don't know
*Decreasing quality of sorted materials	☐	☐	☐	☐	☐	☐
*Increase in the amount of unsorted waste	☐	☐	☐	☐	☐	☐
*Increase of food waste	☐	☐	☐	☐	☐	☐
*Increase of glass	☐	☐	☐	☐	☐	☐
*Increase of WEEE (Waste Electric and Electronic Equipment)	☐	☐	☐	☐	☐	☐
*Increase of bulky waste	☐	☐	☐	☐	☐	☐
*Increase of construction /demolition waste	☐	☐	☐	☐	☐	☐
*Increase of plastic and metal Packaging (waste)	☐	☐	☐	☐	☐	☐

* 1.4 How would you consider the quality of the information provided on waste management and collection in your city to tourists?

- ☐ Very Good
- ☐ Good
- ☐ Fair
- ☐ Poor
- ☐ Very poor



☐ I don't know

* 1.5 How do you consider the information on waste management and collection provided specifically by the tourism sector (hotels, leisure activities, parks, restaurants, etc.) to visitors?

☐ Really poor

☐ Poor

☐ Fair

☐ Good

☐ Really Good

☐ I don't know

1.6 How do you consider your municipality/region is performing in the following waste prevention /management activities?

	Poor	Quite well	Very well	In an excellent way	I don't know
*Waste collection and sorting	☐	☐	☐	☐	☐
*Waste reduction and reuse	☐	☐	☐	☐	☐
*Waste treatment and final disposal	☐	☐	☐	☐	☐
*Awareness raising campaign to the general public focusing on waste	☐	☐	☐	☐	☐
*Information to the private industry related to waste fees, incentives, etc	☐	☐	☐	☐	☐

2 Waste Reduction



* 2.1 Is your company/organization taking actions to boost waste reduction?

- ☐ Yes
- ☐ No
- ☐ I don't know

* 2.2 Which kind of actions is your company/organization undertaking to prevent waste production?

- ☐ Avoiding printing material as far as possible
- ☐ Drinking tap water
- ☐ Using recycling paper
- ☐ Double side printing
- ☐ Reuse
- ☐ Repair
- ☐ Other

* 2.3 Does your company/organization propose solutions for visitors to reduce their waste production?

- ☐ Yes
- ☐ No
- ☐ I don't know

* 2.4 Which kind of the following solutions have you adopted?

- ☐ Soap dispenser
- ☐ Food in bulk rather than in individual packaging
- ☐ Adjustment in the supply chain to avoid/reduce food waste
- ☐ Towels changes based on the client choice
- ☐ Repair products
- ☐ Reuse
- ☐ Small food portion



- ☐ Awareness raising campaign for the clients
- ☐ Providing tap water
- ☐ Using reusable packaging
- ☐ Other

3 Waste Information

* 3.1 Do you have any ideas on how to improve communication in the tourism industry related to waste management?

- ☐ Yes
- ☐ No

3.2 Please briefly explain your ideas to improve communication in the tourism industry related to waste management

4 Tourist and Waste

4.1 Please rank the following criteria (from 1 to 6) in order of importance for tourists when choosing and booking their accommodation according to your opinion



*Price	☐	☐			☐	☐
*Location	☐	☐	☐	☐	☐	☐
*Environmental awareness	☐	☐	☐	☐	☐	☐
*Leisure activities	☐	☐	☐	☐	☐	☐
*Room facilities	☐	☐	☐	☐	☐	☐
*Hotel rating (Stars, Tripadvisor, etc)	☐	☐	☐	☐	☐	☐

* 4.2 When travelling, do you think tourists care about waste production and management as they do in their own households?

☐ Yes

☐ No

* 4.3 What do you think prevents tourists from sorting their waste when on holiday?

☐ Lack of communication material /solution

☐ Language

☐ Misleading/lack of information on waste collection

☐ Lack of motivation /don't want to think about waste

☐ No financial incentives

☐ Lack of sorting bins in the city

☐ Sorting guidelines too complicated

☐ I don't

know

☐ Other



4.4 In your opinion, which of the following factors would contribute to change visitors' behaviour?

- ☐ Clearer information on the consequences of their actions
- ☐ Clearer information on the facilities for waste collection
- ☐ Clearer understanding of the processes of waste management
- ☐ Being rewarded - free tickets/discounts
- ☐ Feeling that other people are doing it better
- ☐ Stricter regulation
- ☐ Fine for bad behaviours
- ☐ Better infrastructure
- ☐ I don't know
- ☐ Nothing
- ☐ Other

* 4.5 If visitors were to be rewarded for more responsible waste behaviour when staying in your city, which of the following options would you suggest?

- ☐ Free museum ticket
- ☐ Free services-transport
- ☐ Discount at restaurant/bar
- ☐ Promotional gadget- magnet of the city, postcards,etc.
- ☐ Eco- gadget- water bottle, canvas bag,etc.
- ☐ Other

5 Ecosystem services

5.1 Please rate the importance of the following local ecosystem services for visitors in your city /region



	1. Very Important	2. Somehow important	3. Not important
*Provision of local freshwater	☐	☐	☐
*Provision of local food	☐	☐	☐
*Recreation and ecotourism	☐	☐	☐
*Aesthetics / beauty	☐	☐	☐
*Spiritual / religious meaning	☐	☐	☐
*Learning and teaching	☐	☐	☐
*Cultural heritage	☐	☐	☐
*Inspiration, Sense of place	☐	☐	☐

5.2 Please give some details/examples for those service you rated 1 - very important:(e.g. name of the area, name of the product, name of the resource, type of usage...)

6 Personal information



6.1 What is your gender?

- ☐ Female
- ☐ Male
- ☐ Other
- ☐ I prefer not to respond

6.2 How many persons are living in your household?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 or more

6.3 How many of those are children?

- ☐ None
- ☐ 1
- ☐ 2
- ☐ 3 or more

6.4 Do you consider yourself to be a disabled person?

- ☐ Yes
- ☐ No
- ☐ I prefer not to respond

6.5 What is your age?

- ☐ 18-24
- ☐ 25-34
- ☐ 35-54
- ☐ 55-64
- ☐ 65-74
- ☐ 75 or older
- ☐ I prefer not to respond



6.6 What is your country of residence?

6.7 What is the highest level of education you have completed?

- ☐ Did not attend school
- ☐ Primary school
- ☐ High school
- ☐ Vocational qualification
- ☐ Bachelor
- ☐ Master
- ☐ PhD
- ☐ I prefer not to respond

6.8 Please indicate your field of study

- ☐ Science/Technology/Maths/Engineering
- ☐ Architecture/Planning/Urban Design
- ☐ Social/Economic/Political Science
- ☐ Art/Humanities
- ☐ Legal studies
- ☐ Medicine or health related subject
- ☐ Other

Thank you for your participation!



Annex 2 – Waste management workers



URBANWASTE- Waste management workers

Fields marked with * are mandatory.

The following survey is part of the research activity conducted in the framework of URBANWASTE project, funded by the H2020 programme of the European Commission. URBANWASTE aims at understanding how tourism-related activities influence waste generation and management in 11 pilot cases around Europe. To do so, on one side, the project will perform a metabolic analysis, quantifying the flow of materials that are entering and leaving a pilot area, and from the other side it will get insights from professionals working in the waste management sector as you. This is the reason why we would really appreciate it if you could answer the following questions. The survey is anonymous and it will not take longer than 10 minutes. You will be able to consult the final results on our website after December 2016.

Thank you in advance for your collaboration!

- * 1 Do you work on any kind of waste-related activities (waste management, waste prevention, awareness raising, circular economy)?

☐ Yes

☐ No

- * 2 In which of the following city/region are you working?

☐ Copenhagen

☐ Dubrovnik Neretva Region

☐ Florence



- ☐ Kavala
- ☐ Lisbon
- ☐ Nice
- ☐ Nicosia
- ☐ Ponta Delgada
- ☐ Santander
- ☐ Syracuse
- ☐ Tenerife
- ☐ Other

* 3 In which kind of organization are you working?

- ☐ Local public authority
- ☐ Regional public authority
- ☐ National public authority
- ☐ Waste management and/or recycling company
- ☐ Non profit
- ☐ Civil society organization
- ☐ Research organization/university ☐ Other

* 4 What is your job position?

- ☐ President/Director
- ☐ Manager
- ☐ Technician
- ☐ Researcher
- ☐ Administrative
- ☐ Intern ☐ Other

* 5 Please indicate the percentage of women and men working in your department

- ☐ Only men
- ☐ Up to 25% women
- ☐ 25-50% women



- ☐ 50-75% women
- ☐ More than 75% women
- ☐ Only women

* 6 Is your head of department male or female?

- ☐ Male ☐ Female

1 Waste Management

* 1.1 How would you rate waste management efficiency in your city/region?

- ☐ Not efficient
- ☐ Pretty efficient
- ☐ Really efficient

* 1.2 What are waste management priorities in your opinion?

- ☐ Improve waste collection systems
- ☐ Eco-designed products
- ☐ Optimize waste treatment
- ☐ Optimize recycling and composting
- ☐ Reduce landfilling
- ☐ Awareness raising on citizens and business
- ☐ Behavioural change
- ☐ Waste prevention
- ☐ Reduce incineration
- ☐ Increase incineration
- ☐ Focus on specific waste fractions
- ☐ Re-use
- ☐ I don't know
- ☐ Other



* 1.3 To what extent do you believe tourism affects waste production in your city/region?

- ☐ Significantly
- ☐ Partially
- ☐ Moderately
- ☐ Not relevant
- ☐ I don't know

* 1.4 What are the main sources of waste production depending on tourism in your city?

- ☐ Street bins
- ☐ Hotels
- ☐ Catering sector
- ☐ Vacation homes/ Second homes
- ☐ Restaurants
- ☐ Bars
- ☐ Other

1.5 In your opinion how does tourism affect waste production?

	1. Very Low	2	3	4	5. Very Much	I don't know
*Decrease quality of sorted materials	☐	☐	☐	☐	☐	☐
*Increase in the amount of unsorted waste	☐	☐	☐	☐	☐	☐
*Increase of food waste	☐	☐	☐	☐	☐	☐
*Increase of glass	☐	☐	☐	☐	☐	☐



*Increase of WEEE (Waste Electric and Electronic Equipment)	☐	☐	☐	☐	☐	☐
*Increase of bulky waste	☐	☐	☐	☐	☐	☐
*Increase of construction /demolition waste	☐	☐	☐	☐	☐	☐
*Increase of plastic and metal (packaging) waste	☐	☐	☐	☐	☐	☐

* 1.6 Do you think that tourism influence waste management in your city/region?

- ☐ Yes, in a significant way
- ☐ Yes, but not significantly
- ☐ No
- ☐ I don't know

1.7 How does tourism affect waste management in your opinion?

- ☐ Seasonal increase in waste
- ☐ Illegal dumping
- ☐ Street bins and containers in undercapacity in some areas
- ☐ Contamination of households waste containers with unsorted fractions
- ☐ Increasing nuisances due to waste (odours...)
- ☐ Difficulties with waste handling by hotels, beaches, and catering sector
- ☐ I don't know
- ☐ Other



* 1.8 How would you rate the quality of the information provided to tourists on waste management and collection in your city?

- ☐ Very Good
- ☐ Good
- ☐ Fair
- ☐ Poor
- ☐ Very Poor
- ☐ I don't know

How do you consider your municipality/region is performing in the following waste prevention /management activities?

	Poor	Quite well	Very well	In an excellent way	I don't know
*Waste collection and sorting	☐	☐	☐		
*Waste prevention and reuse	☐	☐	☐	☐	☐
*Waste treatment and final disposal	☐	☐	☐	☐	☐
*Awareness raising campaign to the general public focusing on waste	☐	☐	☐	☐	☐
*Information to the private industry related to waste fees, incentives, etc	☐	☐	☐	☐	☐
Other	☐	☐	☐	☐	☐



* 1.10 Which of the following options would you consider as a main challenge for waste management in tourist cities?

- ☐ High cost borne by local services
- ☐ Foreseeing increasing quantities to adapt collection/treatment capacities
- ☐ Difficulty to (quickly) allocate additional resources to waste management (staff, bins, collection trucks)
- ☐ Difficulties for tourism service provider to properly train seasonal workers
- ☐ I don't know
- ☐ Other

2 Waste and Behaviour

* 2.1 To what extent do you consider individual behaviours and choices relevant in terms of waste production?

- ☐ Not relevant
- ☐ Pretty relevant
- ☐ Really relevant

2.2 What do you think influences people most with regard to waste management and production issues?

- ☐ Advertisements/Awareness raising campaign
- ☐ Educational programmes
- ☐ Waste fees/sorting incentives
- ☐ Ethics-related issues
- ☐ Health problems related to bad waste management
- ☐ Behaviours of others
- ☐ Nothing
- ☐ I don't know
- ☐ Other

2.3 When travelling, do you think that visitors take care of their waste production and management as they do in their households?

- ☐ Yes
- ☐ No



☐ I don't know

* 2.4 What do you think prevents tourists from sorting their waste when on holiday?

- ☐ Lack of communication material/ solution
- ☐ Language
- ☐ Misleading / Lack of information on waste collection
- ☐ Lack of motivation / don't want to think about waste
- ☐ No financial incentives
- ☐ Lack of sorting bins in the city
- ☐ Sorting guidelines too complicated
- ☐ I don't know
- ☐ Other

* 2.5 Which of the following actions would contribute to change tourists behaviour during their holidays in your opinion?

- ☐ Clearer information on the consequences of their actions
- ☐ Clearer information on the facilities for waste collection
- ☐ Clearer understanding of the processes of waste management
- ☐ Being rewarded for more responsible behaviour- free tickets/discounts
- ☐ Feeling that other people are doing it better
- ☐ Stricter regulation
- ☐ Fine for bad behaviours
- ☐ Better infrastructure for waste collection
- ☐ I don't know
- ☐ Nothing
- ☐ Other

* 2.6 If you were to be rewarded for your good waste behaviour on holidays, which of the following options would you prefer?

- ☐ Free museum ticket
- ☐ Free services -transport
- ☐ Discount at restaurant/bar
- ☐ Promotional gadget - magnet of the city, postcards,etc.



☐ Eco - gadget- water bottle, canvas bag, etc.

☐ Other

3 Personal information

3.1 What is your gender?

☐ Female

☐ Male

☐ Other

☐ I prefer not to respond

3.2 How many persons are living in your household?

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5 or more

3.3 How many of those are children?

☐ None

☐ 1

☐ 2

☐ 3 or more

3.4 Do you consider yourself to be a disabled person?

☐ Yes

☐ No

☐ I prefer not to respond

3.5 What is your age?

☐ 18-24



- ☐ 25-34
- ☐ 35-54
- ☐ 55-64
- ☐ 65-74
- ☐ 75 or older
- ☐ I prefer not to respond

3.6 What is your country of residence?

3.7 What is the highest level of education you have completed?

- ☐ Did not attend school
- ☐ Primary school
- ☐ High school
- ☐ Vocational qualification
- ☐ Bachelor
- ☐ Master
- ☐ PhD
- ☐ I prefer not to respond

3.8 Which is your field of study?

- ☐ Science/Technology/Engineering/Maths
- ☐ Architecture/Planning/Urban Design
- ☐ Social/Economic/Political Science
- ☐ Art/Humanities
- ☐ Legal studies
- ☐ Medicine or health related subject
- ☐ Other

Thank you for your participation!



Annex 3 - Tourists



URBANWASTE- Tourists

Fields marked with * are mandatory.

The following survey is part of a research included in the URBANWASTE project, funded by the H2020 programme of the European Commission. It aims at understanding how tourism-related activities influence waste generation and management in 11 pilot cases around Europe and what we can do to reduce them. Therefore, we would like to understand the point of view of tourists during their holidays. This is the reason why we would really appreciate it if you could answer the following questions. The survey is anonymous and it will not take longer than 10 minutes. You will be able to consult the final results on our website after December 2016.

Thank you in advance for your collaboration!

* 1 Which of the following cities/regions are you staying/have you stayed in?

- ☐ Copenhagen
- ☐ Dubrovnik Neretva Region
- ☐ Florence
- ☐ Kavala
- ☐ Lisbon
- ☐ Nice
- ☐ Nicosia
- ☐ Ponta Delgada
- ☐ Santander



- ☐ Syracuse
- ☐ Tenerife
- ☐ Other

* 2 How long have you been/are you staying there?

- ☐ Less than 3 days
- ☐ Between 3 days and a week
- ☐ Between one
and 3 weeks
- ☐ More than 3
weeks

3 Is this your first time visiting this city/region?

- ☐ Yes
- ☐ No

* 4 How often have you been there before?

- ☐ Once
- ☐ More than once
- ☐ I come here regularly

* 5 Could you please indicate the reason of your trip?

- ☐ Business trip
- ☐ Leisure
- ☐ Visiting
family/friends
- ☐ Other

* 6 Where are you staying?

- ☐ Hotel
- ☐ Hostel



- ☐ B&B /Air B&B
- ☐ Camping site
- ☐ Own second home
- ☐ Relative's/Friend's place
- ☐ Other

1 Tourism and Waste

* 1.1 To what extent do you believe tourism affects waste production in the city you are visiting?

- ☐ Significantly
- ☐ Moderately
- ☐ Not relevant
- ☐ I don't know

* 1.2 How would you consider the quality of information on waste management and collection in the city you are visiting?

- ☐ Very Good
- ☐ Good
- ☐ Fair
- ☐ Poor
- ☐ Very Poor
- ☐ I don't know

2 Waste behaviour

2.1 Are you responsible for the management of your waste in your household?

- ☐ Yes
- ☐ No
- ☐ Shared responsibility



* 2.2 Please rate the regularity in sorting household wastes at your place

- ☐ Always
- ☐ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never
- ☐ Depends on the type of waste
- ☐ I don't know

* 2.3 Which kind of waste do you usually sort in your household?

- ☐ Paper
- ☐ Plastic packages
- ☐ Metal Packages
- ☐ Glass
- ☐ Organic fraction
- ☐ Electric waste
- ☐ Medical waste
- ☐ Green waste
- ☐ None
- ☐ I don't know
- ☐ Other

2.4 If relevant, please tick the actions you do at home to reduce your waste production

- ☐ I never thought about reducing my waste production
- ☐ Drinking tap water
- ☐ Home composting
- ☐ Buy in bulk
- ☐ Buy second hand products
- ☐ Buy products with reusable packaging



- ☐ I try to plan my meals to avoid food waste
- ☐ I'm using ICT solutions (App, internet of things) to reduce my waste
- ☐ Other

* 2.5 What prevents you from sorting your waste in your household?

- ☐ Lack of information on how to do it
- ☐ Do not see the point
- ☐ No time to do it
- ☐ No financial incentives
- ☐ I think it will make people lose their jobs
- ☐ My impact is limited compared to retailers/industries
- ☐ Too much packaging proposed and no eco-friendly products available
- ☐ Lack of sorting bins in the city
- ☐ Other

* 2.6 To what extent do you consider individual behaviours and choices relevant in terms of waste production?

- ☐ Not relevant
- ☐ Moderately relevant
- ☐ Really relevant
- ☐ I don't know
- ☐ Other

* 2.7 What could influence you more to reduce your waste production?

- ☐ Advertisements/Awareness raising campaign
- ☐ Educational Programmes
- ☐ Waste fees/sorting incentives
- ☐ Ethics related issues
- ☐ Discover a correlation between bad waste management and health problems
- ☐ Nothing
- ☐ I don't



know

☐ Other

3 Tourism and Waste

3.1 Please rank the following criteria (from 1 to 6) considering their importance in choosing your hotel/accommodation when you travel

	1- Least important	2	3	4	5	6- Most important
*Price	☐	☐	☐	☐	☐	☐
*Location	☐	☐	☐	☐	☐	☐
*Environmental Awareness	☐	☐	☐	☐	☐	☐
*Leisure Activities	☐	☐	☐	☐	☐	☐
*Room facilities	☐	☐	☐	☐	☐	☐
*Hotel Rating (Stars, Reviews)	☐	☐	☐	☐	☐	☐

3.2 How worried are you about food waste at home?

- ☐ Not at all
- ☐ Moderately
- ☐ Really worried

3.3 How worried are you about food waste during your holidays/visit?

- ☐ Not at all



- ☐ Moderately
- ☐ Really worried

* 3.4 When travelling, do you take care about your waste production as you do at home?

- ☐ More than at home
- ☐ Same as at home
- ☐ Less than at home
- ☐ I don't know

* 3.5 When travelling, do you take care about your waste management/sorting as you do at home?

- ☐ More than at home
- ☐ Same as at home
- ☐ Less than at home
- ☐ I don't know

3.6 What do you think prevents you from sorting your waste when on holiday?

- ☐ Lack of communication material / solution
- ☐ Language
- ☐ Misleading/Lack of information on waste collection
- ☐ Lack of motivation / don't want to think about waste
- ☐ No financial incentives
- ☐ Lack of sorting bins in the city
- ☐ Sorting guidelines too complicated
- ☐ I don't know
- ☐ Other



* 3.7 Have you ever thought/are you thinking about reducing/better managing your waste while travelling?

- ☐ Always
- ☐ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

3.8 Could you give us any example about your actions for reducing/better managing your waste during your holidays? (i.e Buying package-free products, drinking tap water, etc.)

* 3.9 What waste fractions did you sort/are you sorting during your holidays?

- ☐ Paper
- ☐ Glass
- ☐ Plastic packaging
- ☐ Metal packaging
- ☐ Organic fraction
- ☐ Electric waste
- ☐ Medical waste
- ☐ Green waste
- ☐ None
- ☐ Other

4 Behavioural Change

* 4.1 Which of the following factors would contribute to change your behaviour during your travels?



- ☐ Clearer information on the consequences of my actions
- ☐ Clearer information on the facilities for waste collection
- ☐ Clearer understanding of the processes of waste management
- ☐ Being rewarded for more responsible behaviour- free tickets/discounts
- ☐ Feeling that other people are doing it better than me
- ☐ Stricter Regulation
- ☐ Fine for bad behaviours
- ☐ Better infrastructure for waste collection
- ☐ I don't know
- ☐ Nothing
- ☐ Other

4.2 If you were to be rewarded for your good waste behaviour when on holidays, which of the following options would you prefer?

- ☐ Free museum ticket
- ☐ Free services -transport
- ☐ Discount at restaurant/bar
- ☐ Promotional gadget - magnet of the city, postcards,etc.
- ☐ Eco-gadget - water bottle, canvas bag,etc.
- ☐ Other

5 Ecosystem Services

Ecosystems can be forests, landscapes, lakes, oceans and seas, agricultural land or even urban areas – ecosystem services should be considered as the benefits to people from these ecosystems

5.1 Ecosystem Services

1. Very Important

2. Somehow

3. Not important



		important	
*Provision of local freshwater	☐	☐	☐
*Provision of local food	☐	☐	☐
*Recreation and ecotourism	☐	☐	☐
*Aesthetics / beauty	☐	☐	☐
*Spiritual / religious meaning	☐	☐	☐
*Learning and teaching	☐	☐	☐
*Cultural heritage	☐	☐	☐
*Inspiration, Sense of place	☐	☐	☐
*Other	☐	☐	☐

5.2 Please give some details/examples for those service you rated 1 - very important:(e.g. name of the area, name of the product, name of the resource, type of usage...)



6 Personal information

6.1 What is your gender?

- ☐ Female
- ☐ Male
- ☐ Other
- ☐ I prefer not to respond

6.2 How many persons are living in your household?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 or more

6.3 How many of those are children (under 18)?

- ☐ None
- ☐ 1
- ☐ 2
- ☐ 3 or more

6.4 Do you consider yourself to be a disabled person?

- ☐ Yes
- ☐ No
- ☐ I prefer not to respond

6.5 What is your age?

- ☐ 18-24
- ☐ 25-34
- ☐ 35-54
- ☐ 55-64



- ☐ 65-74
- ☐ 75 or older
- ☐ I prefer not to respond

6.6 What is your country of residence?

6.7 What is the highest level of education you have completed?

- ☐ Did not attend school
- ☐ Primary school
- ☐ High school
- ☐ Vocational qualification
- ☐ Bachelor
- ☐ Master
- ☐ PhD
- ☐ I prefer not to respond

6.8 Please indicate us your field of study

- ☐ Science/Technology/Engineering/Maths
- ☐ Architecture/Planning/Urban Design
- ☐ Social/Economic/Political Science
- ☐ Arts/humanities
- ☐ Legal studies
- ☐ Medicine or health related subject ☐ Other

6.9 Which is your current job?



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