

Disposable Water Bottle Use on Villanova University's Campus

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Introduction

Plastics have become an inseparable and integral part of our lives (Siddique et. al 2007). The amount of plastic waste can be attributed to the packaging in automotive and industrial applications, flood prevention, distribution of food, and the factor that is of extreme importance to our study, disposable plastic water bottles. A recent study, roughly 15 years ago, provided data that showed how Polyethylene Terephthalate, the plastic that water bottles are made of, amounted to 1700 tons (Subramanian 2000) this is incomplete. Our group's project is to raise awareness of the amount of disposable water bottles used on campus, and to address the problem of plastic water bottle use by advocating for change. This study will provide both quantitative and qualitative data that can be used to make predictions of future disposable plastic water use on campus, and ways to reduce the amount of waste through new campus initiatives. The data from these surveys are important to Villanova's mission of becoming a more sustainable campus, as the waste that is produced from disposable water bottle use contributes massively to increased carbon emissions, and large-scale trash production. As the Villanova Community increases in size, resources must be allocated in a sustainable manner, and consumptive patterns must be quelled. Moving towards reusable water bottles furthers both of these initiatives, and sets a precedent for sustainability.



Methods

Provide 100 Villanova students with reusable water bottles from dining services.
Administer a survey to these students after 3 weeks to analyze their water bottle purchasing habits and how those habits have changed.
Analyze the results of this survey and their implications for Villanova's sustainability initiative.

Survey Results

The following figures illustrate student responses regarding their individual water bottle use. These responses embody greater implications for the Villanova community as we try to move forward toward our sustainability initiative.

Figure 1. Number of disposable water bottles students generally purchase in a given week

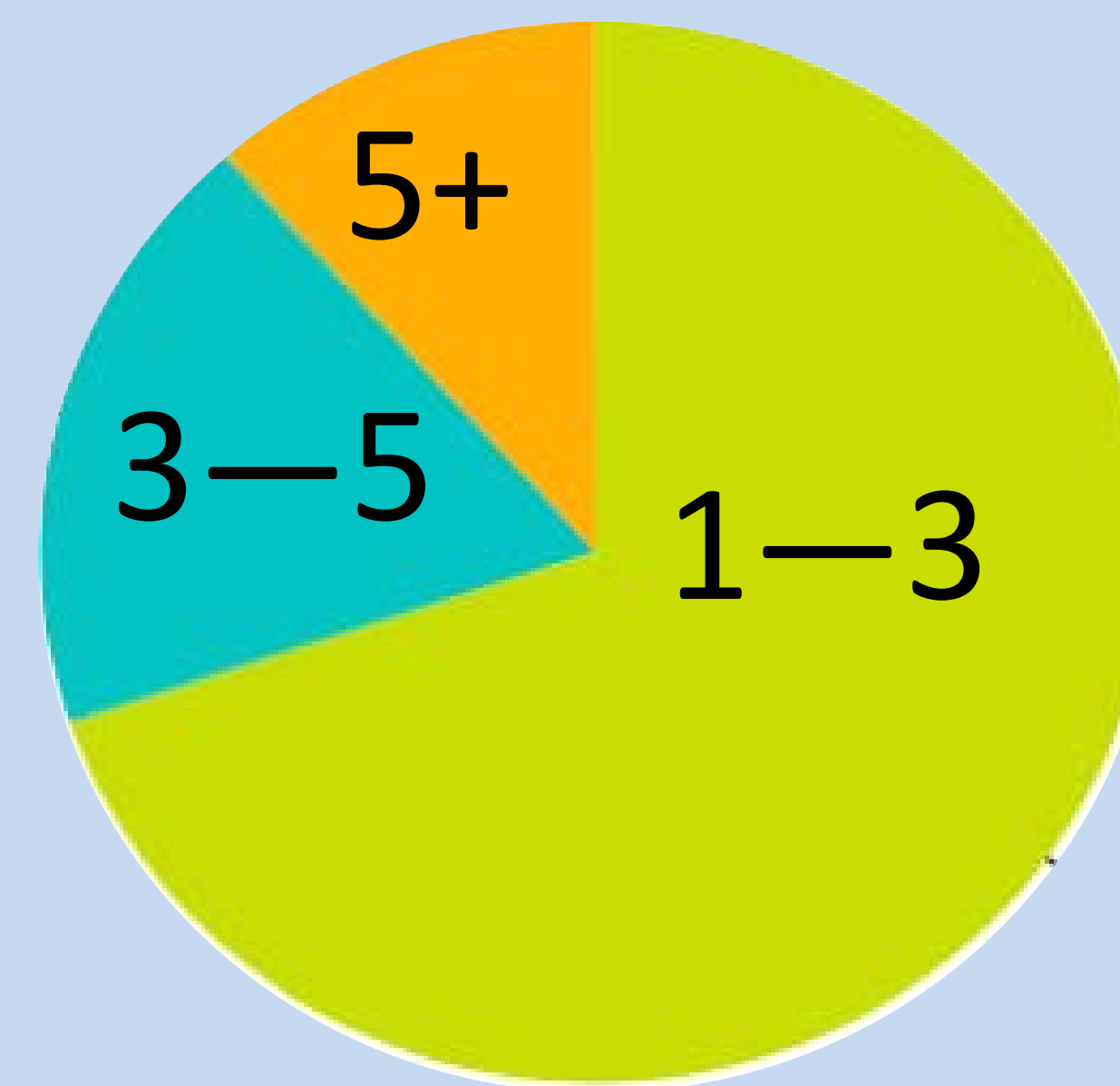


Figure 3. Reasons why students choose disposable water bottles

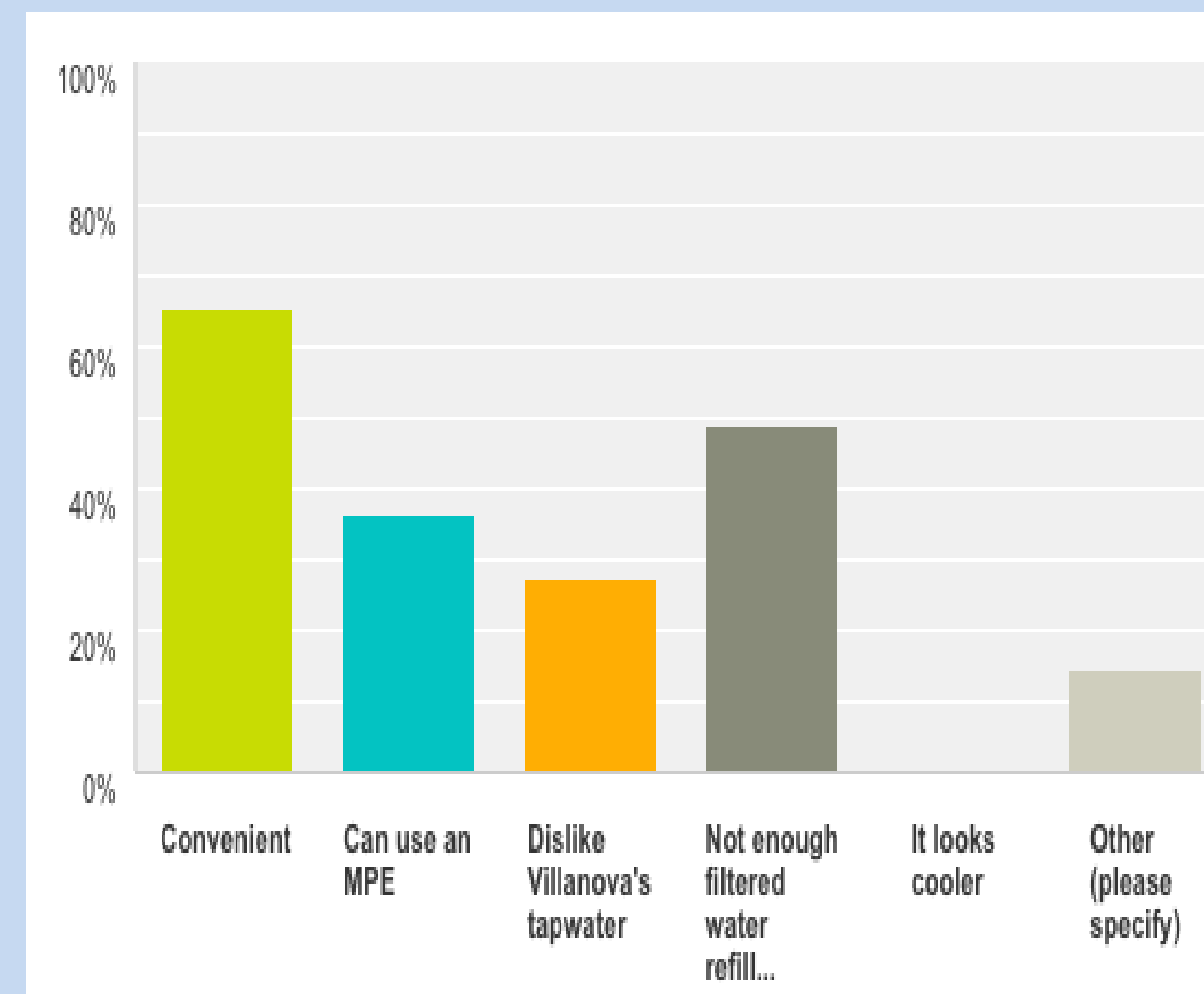


Figure 4. Locations where students most often purchase disposable water bottles

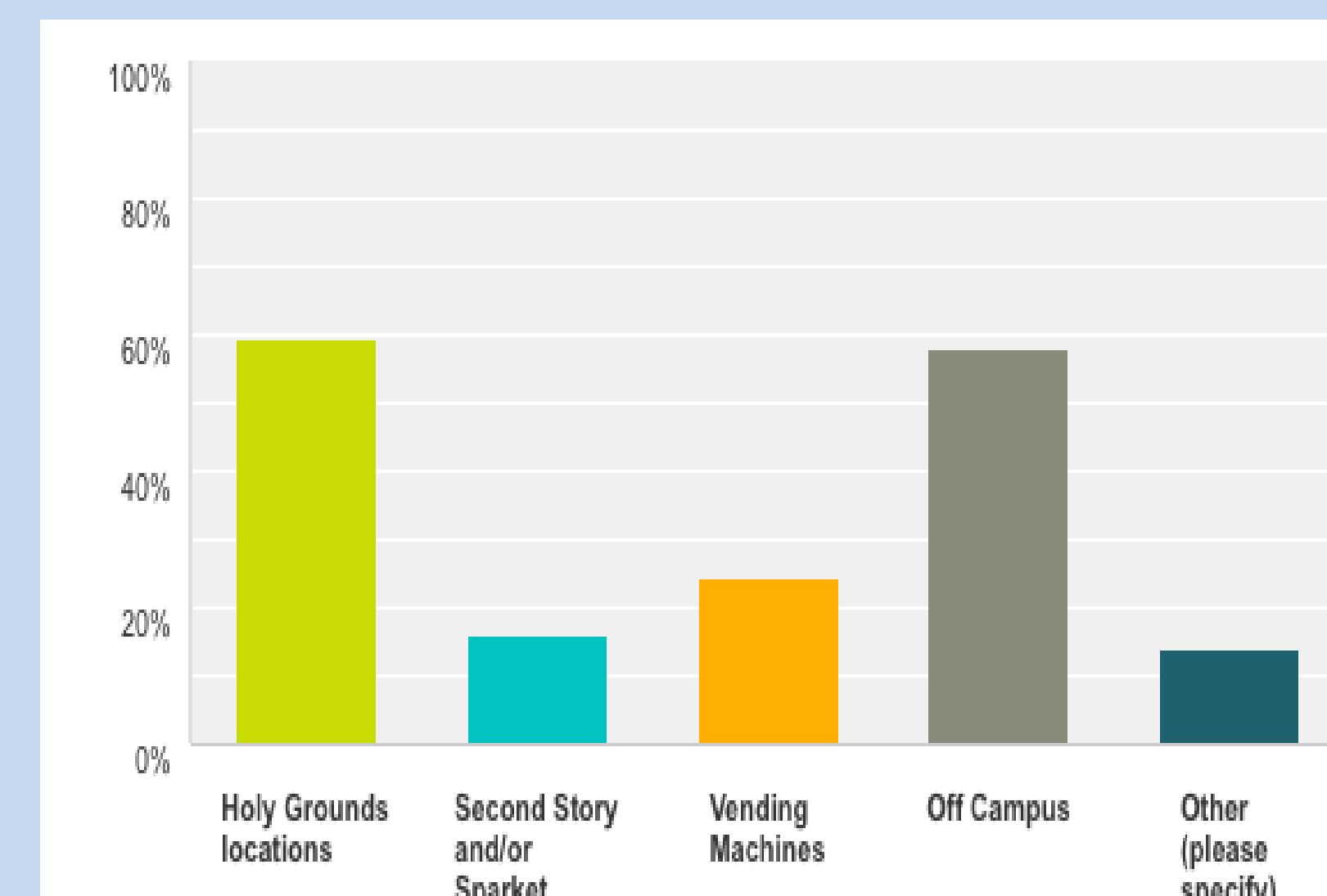
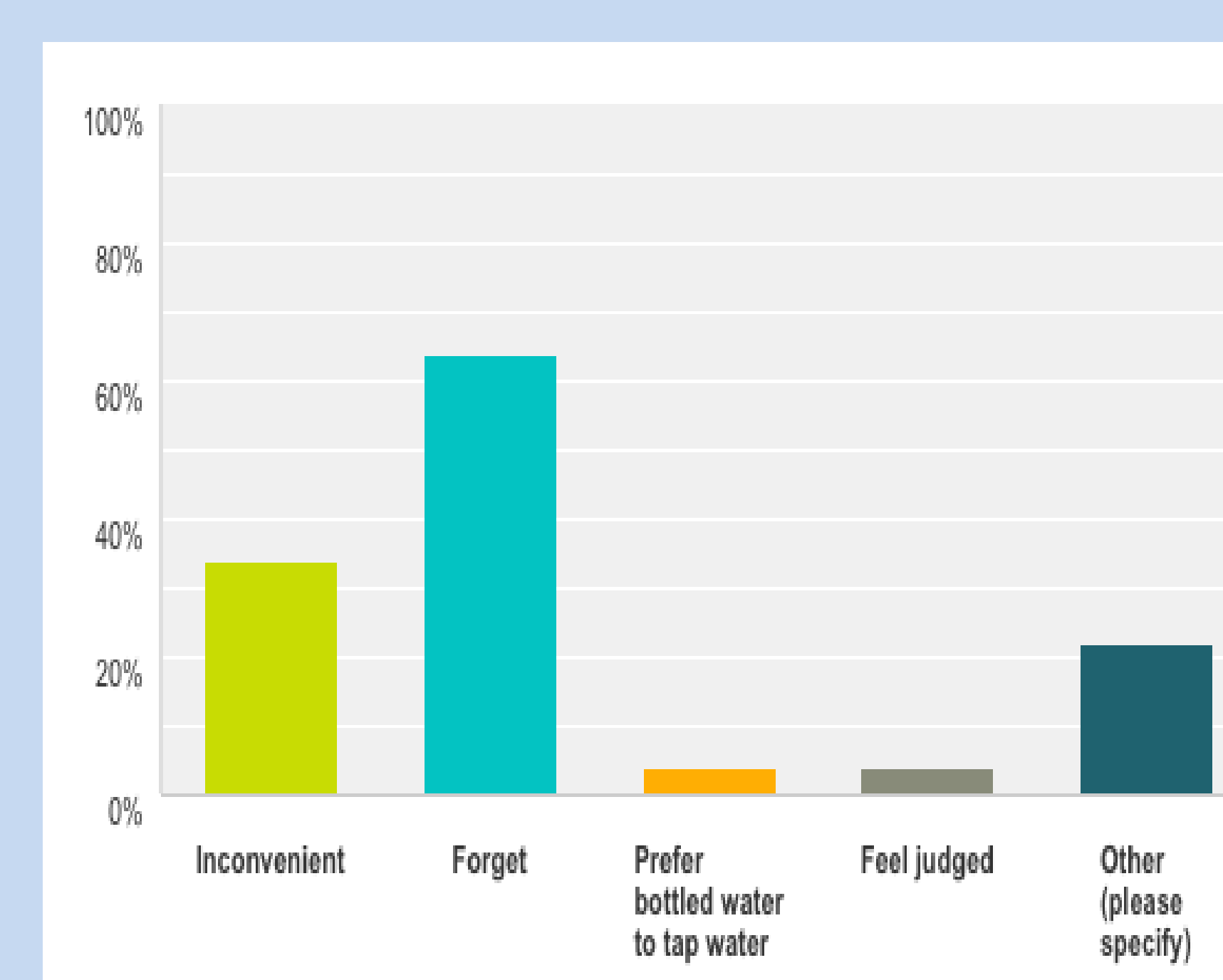


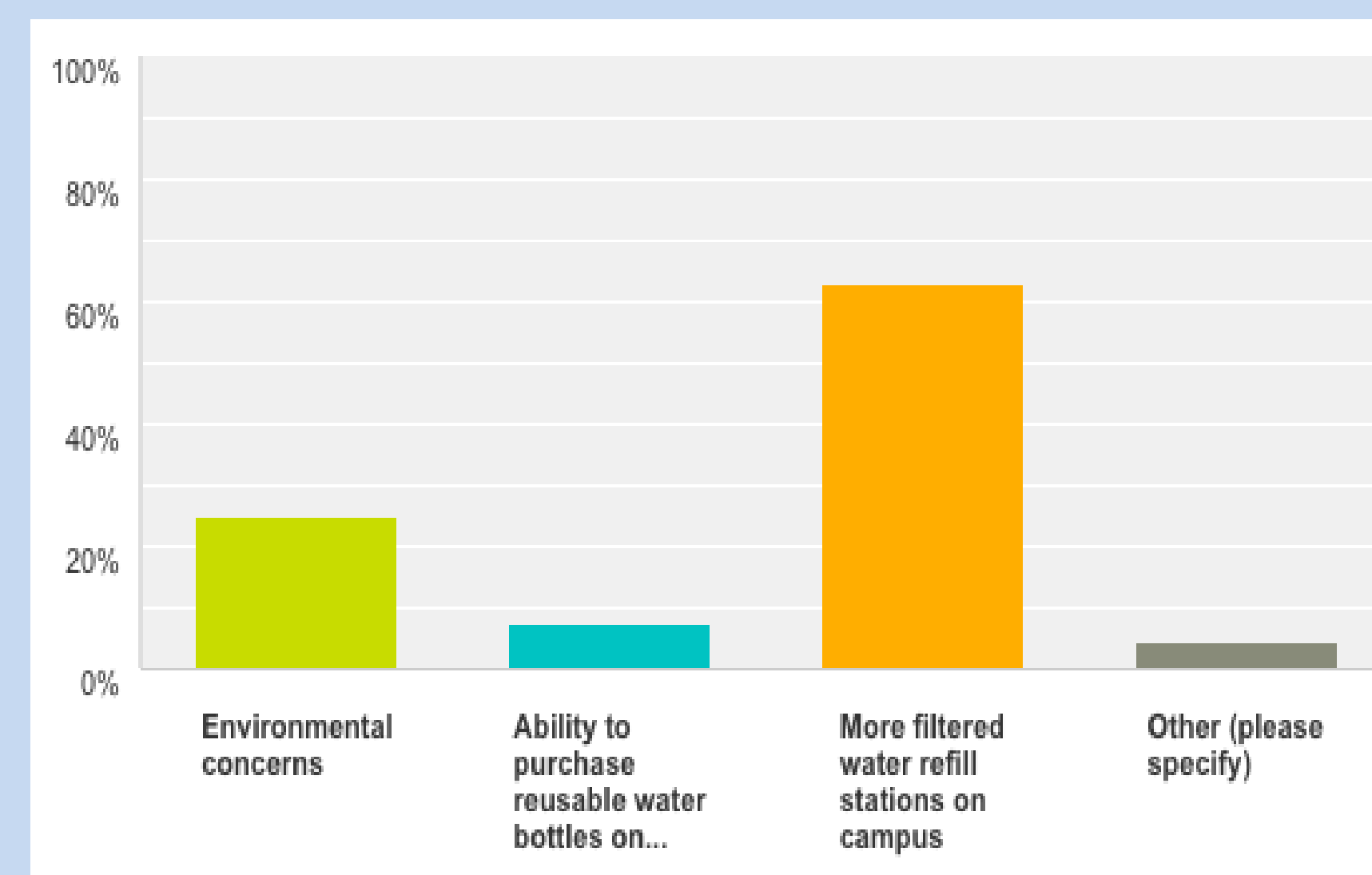
Figure 2. Number of days a week the students carried the reusable water bottle with them



Figure 5. Reasons that restrict students from carrying reusable water bottles



What would incentivize you to use reusable water bottles, rather than disposable ones?



Recommendations

The two most reported reasons that students gave for choosing disposable water bottles were that it is more convenient and there are not enough filtered water refill stations on campus.

Our results therefore supported our hypothesis that convenience is a driving factor in students' water drinking habits.

Addressing the gap in convenience between the two water sources should therefore be the focus of the Villanova community when trying to move toward our goal of sustainability.

Holy Grounds and off campus locations were the two most reported locations students gave with regards to where they purchase these disposable water bottles. It is important that we place water refill stations in convenient locations, such as Holy Grounds, to ensure that they are a desirable alternative for the students. 81% of respondents reported that conserving the amount of disposable water bottles used each day was important to them; we therefore believe it worthwhile for Villanova University to focus sustainability efforts on reducing disposable water bottle use toward implementing more water refill stations in convenient locations throughout campus.

References

Siddique, Rafat, and Jamal Khatib. "Use of Recycled Plastic in Concrete: A Review." *Use of Recycled Plastic in Concrete: A Review*. Science Direct, 5 Nov. 2007. Web. 19 Apr. 2016. <<http://www.sciencedirect.com/science/article/pii/S0956053X07003054>>.

Subramanian, P. M. "Plastics Recycling and Waste Management in the US." *Plastics Recycling and Waste Management in the US*. Science Direct, Feb. 2000. Web. 19 Apr. 2016. <<http://www.sciencedirect.com/science/article/pii/S092134499900049X>>.

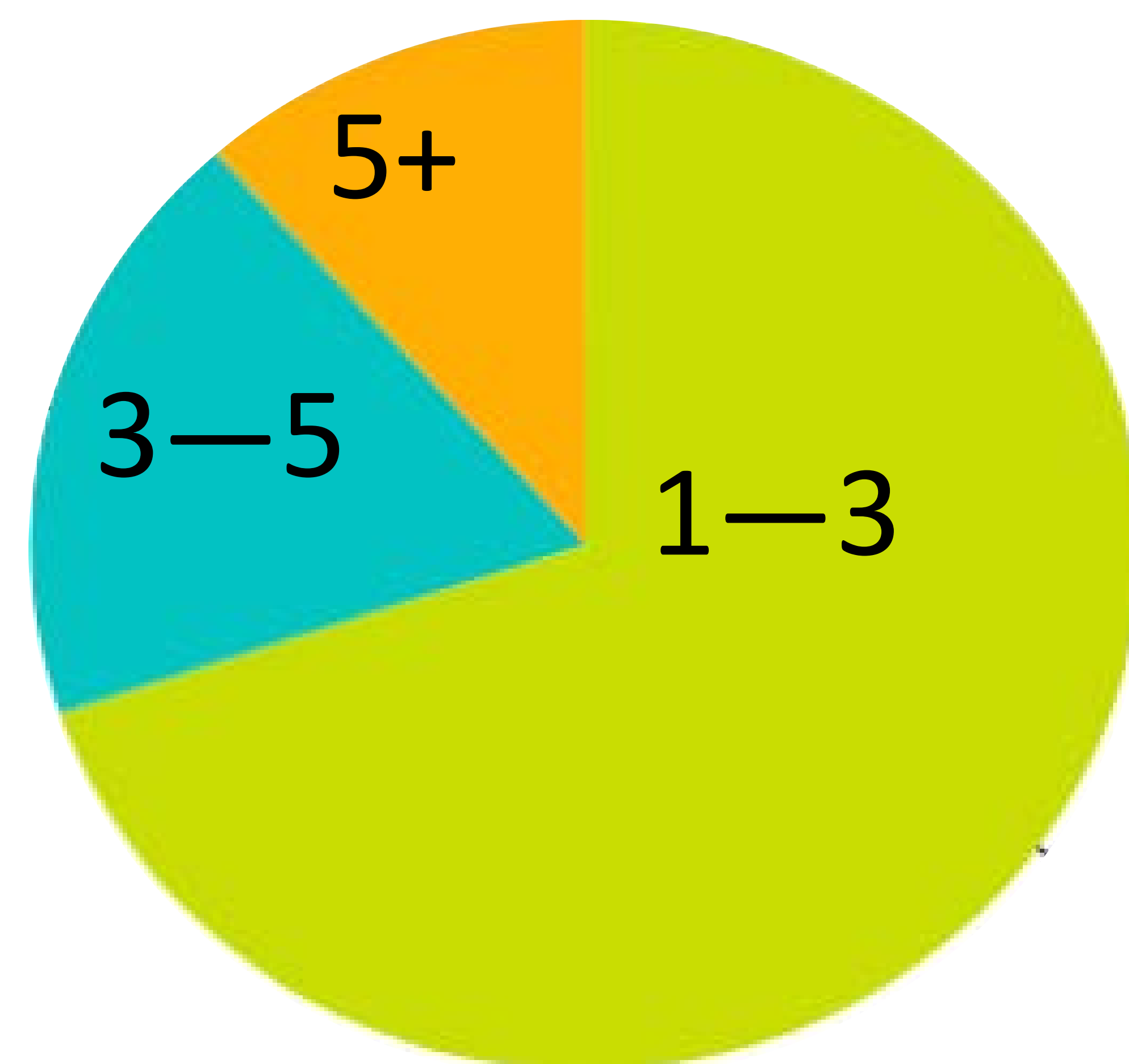
Acknowledgements

We would like to thank Dr. Levas, all of the students who participated in our survey as well as Timothy Dietzler, Director of Dining Services, for providing us with the free reusable water bottles.

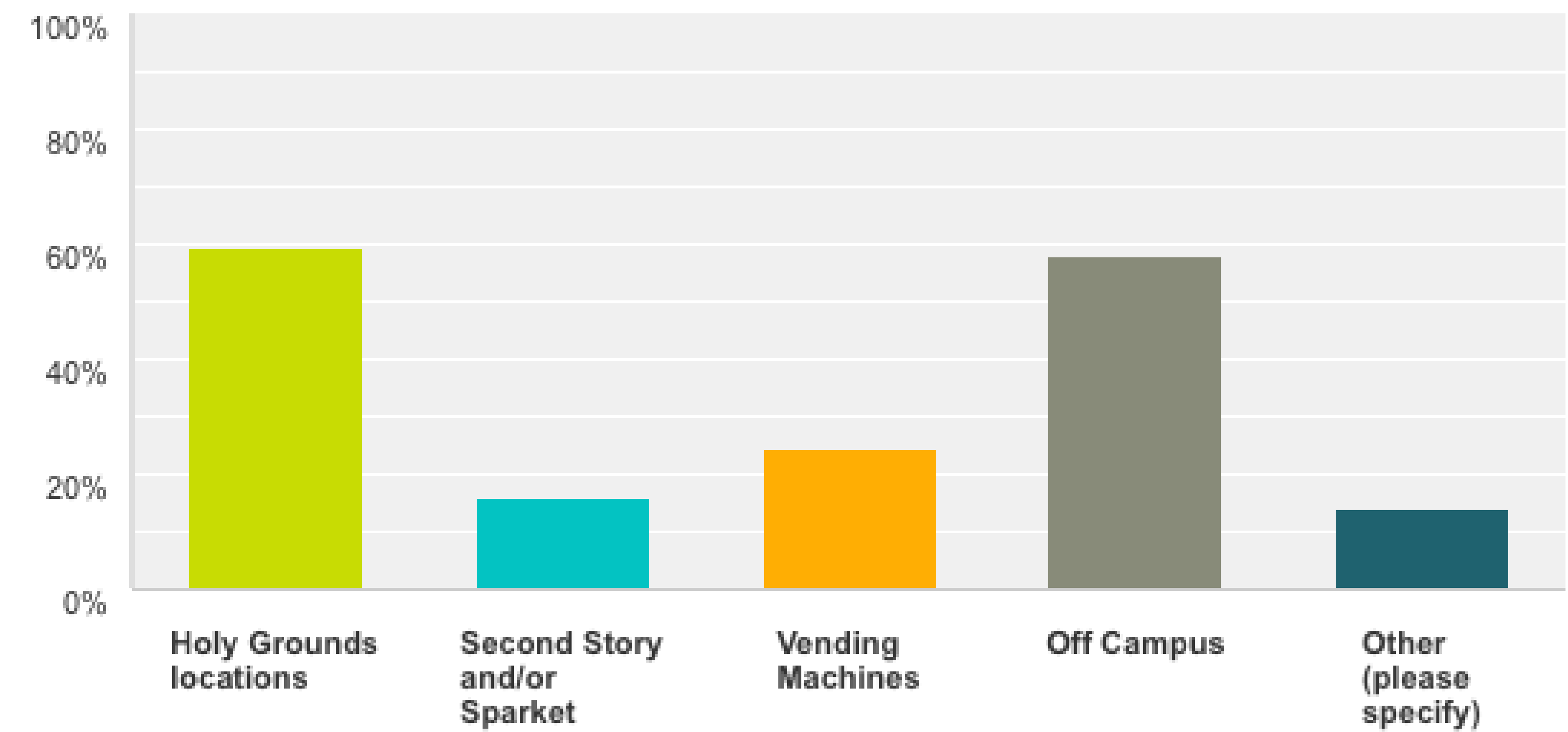
How many days a week did you carry the reusable water bottle with you?



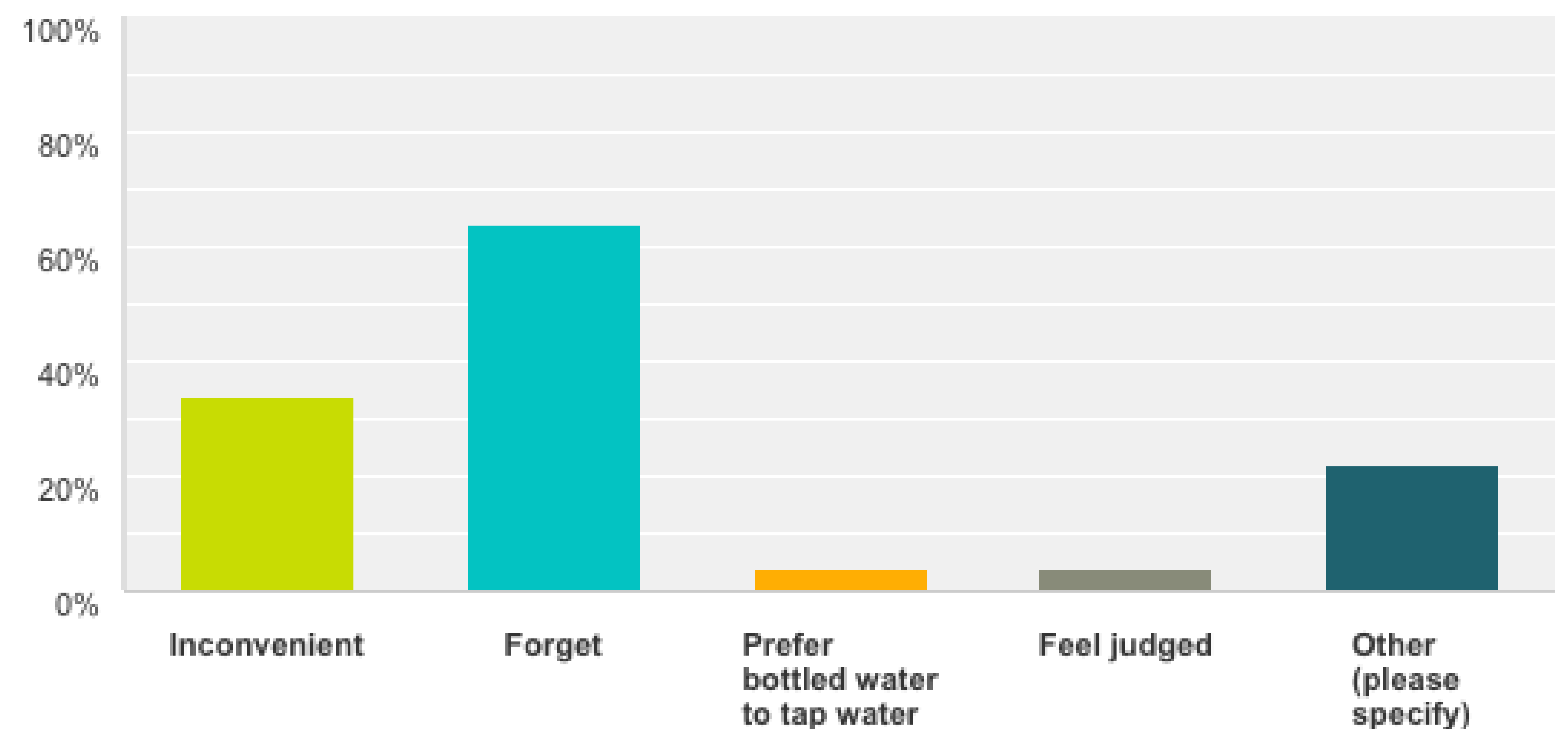
How many disposable water bottles do you generally purchase in a week?

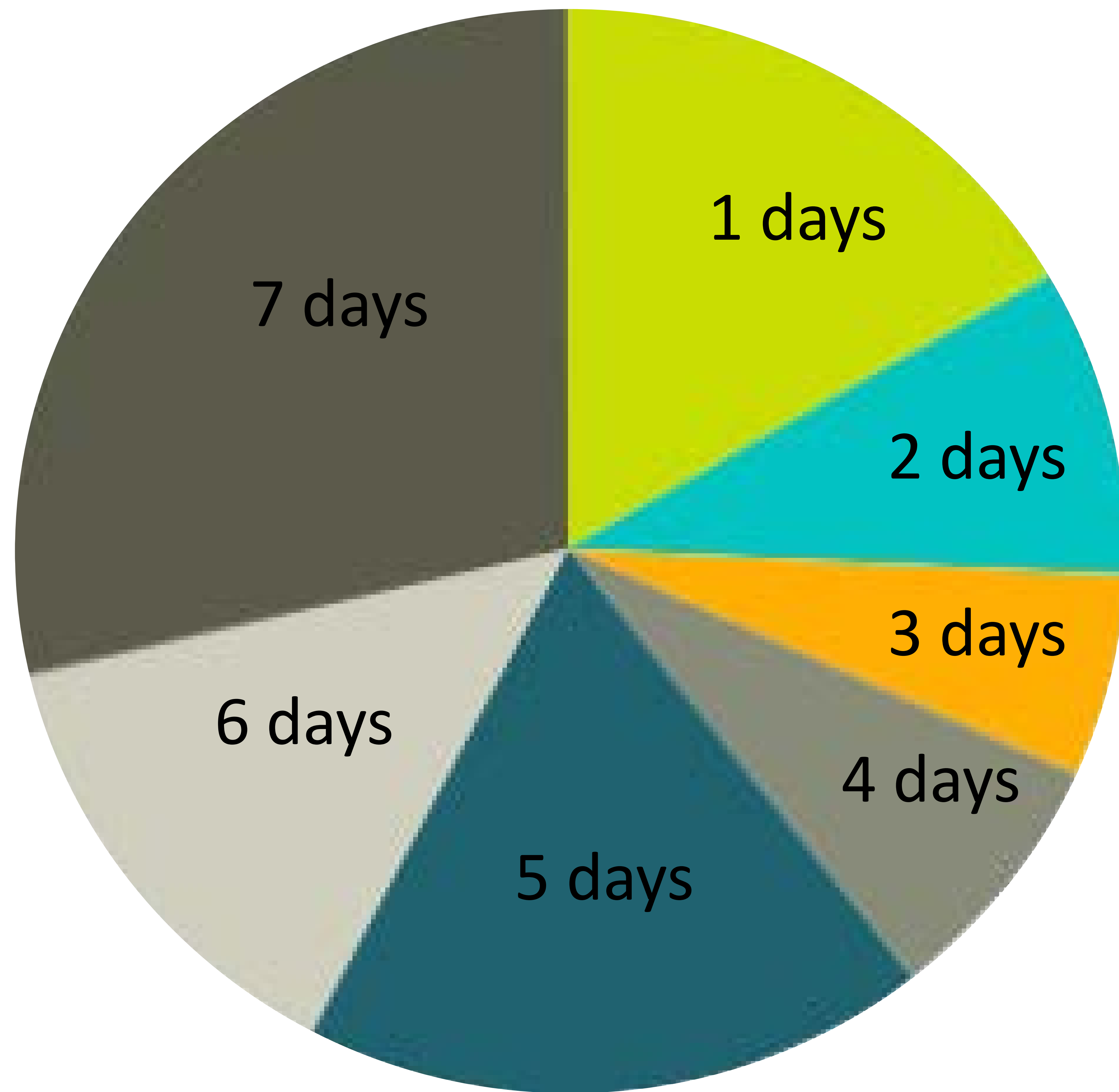


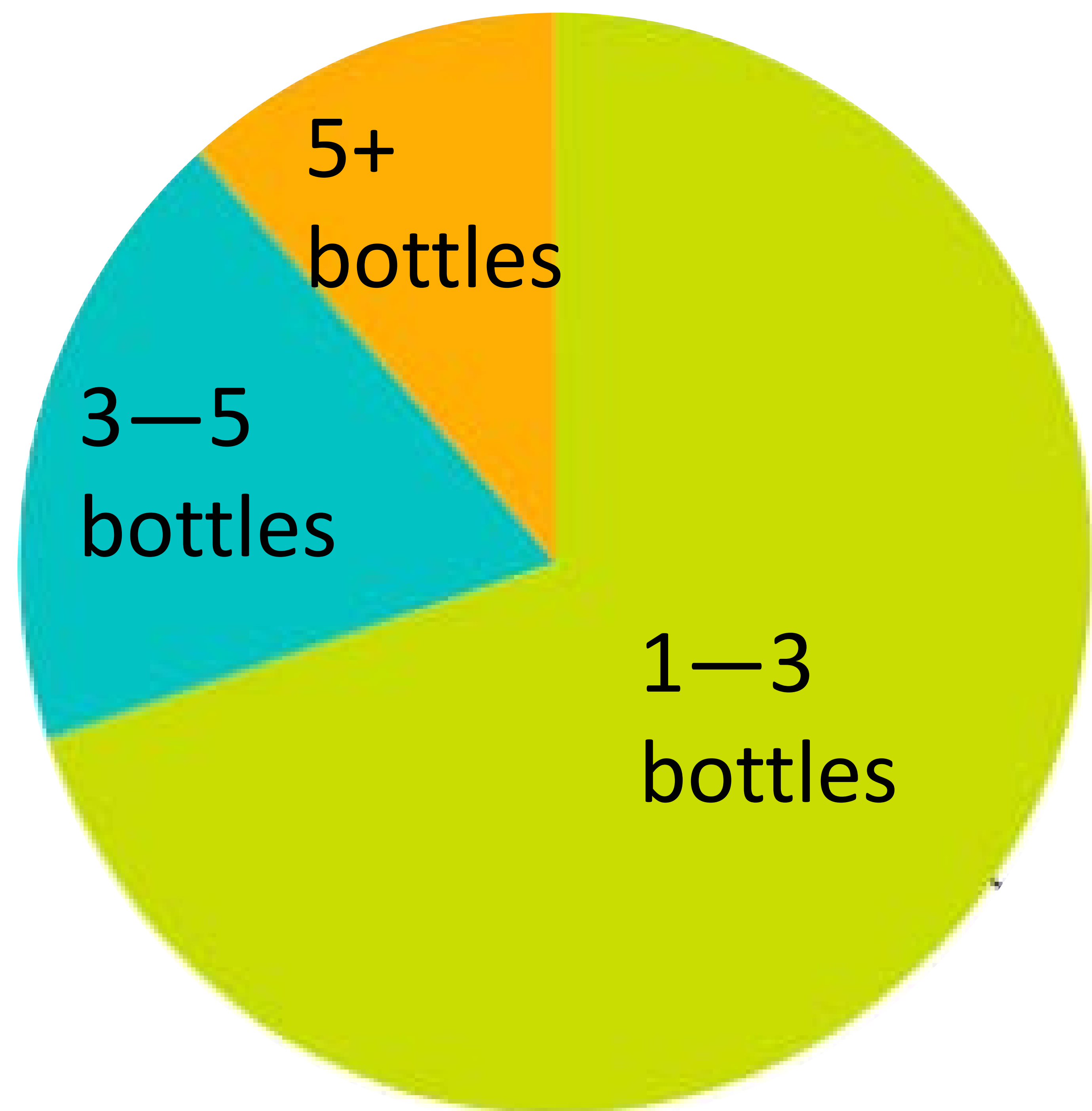
Where do you most often purchase disposable water bottles?



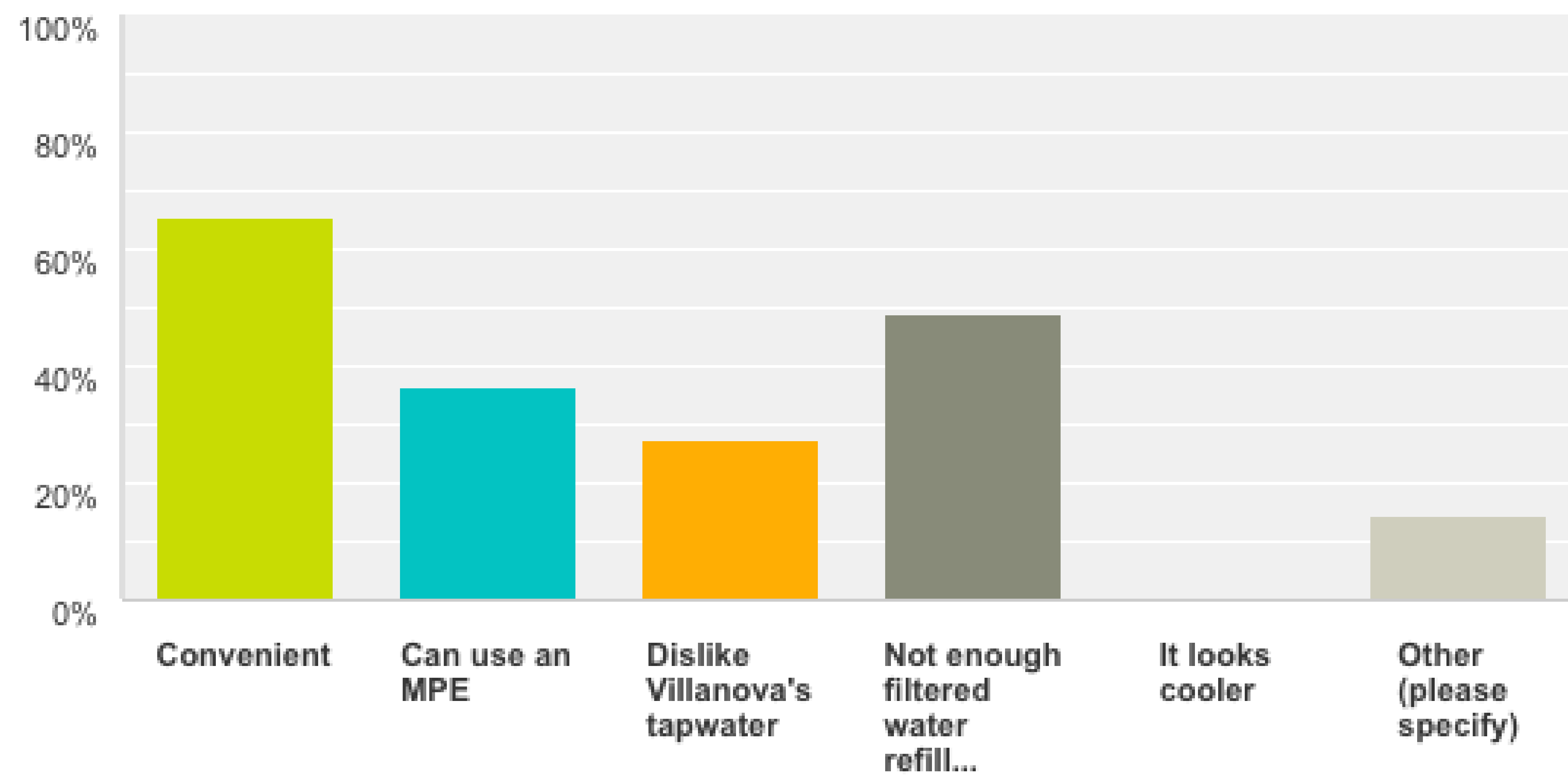
What restricts you from carrying a reusable water bottle?







Why do you choose disposable water bottles?



What would incentivize you to use reusable water bottles, rather than disposable ones?

