SUMMARY

Conceptual Design: A Reusable Bottle towards Users' Purchase and Use Behavior

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This bachelor assignment was commissioned by the NVC Netherlands Packaging Centre. NVC has been active in packaging activities and stimulates its expert knowledge to the worldwide packaging industry. Notably, the PUMA MANIFESTO (NVC, 2020), as initiated by NVC, provides the global packaging community with a conceptual pathway to end packaging as an environmental issue worldwide. Chinese insights are actively integrated in the PUMA thinking and this project is contributing to the goal it.

In recent years, China has become one of the biggest plastic packaged goods consumers, especially the consumption of bottled water has become the top one in the world (CWR, 2015). Moreover, NVC's interest in the causes of a booming consumption of bottled water in China is a starting point of this assignment. Consequently, this project examines how to reduce bottled water consumption in China by developing a reusable water bottle, with the leading research question: ***How to influence and potentially change the consumers' purchase behavior and use behavior and encourage them to use more reusable bottles?***

Firstly, to understand the user behaviour of plastic bottled water consumption in China, a literature review was carried out. It shows that two types of influential factors lead to the bottled water consumption behaviour. In the first place, the external factor(s) influences users' purchase decision-making and use behaviour, including the use contexts, tap water quality, and product packaging. Moreover, the internal factors that drive users' perceptions and motivations also have an effect on their behaviors. Through the existing literature and research, a first overview was obtained of the potential reasons leading to the soaring bottled water consumption in China.

Moreover, to further narrow down the problem and develop appropriate design solutions, market analysis and user analysis were conducted. The market analysis investigates the Chinese reusable bottle market and users' preferences for existing products. For example, the results show the capacity and portability are widely focused product features. Furthermore, the target user group is defined as **people aged 18 to 30 who permanently live in China.** And the user analysis examines their life

situation. The combined results from market analysis and user analysis clarify the most influential factors that lead to specific user behavior in China, including three main aspects: users' perception towards water (tap water and bottled water), the contexts of use and the obstacles preventing them purchasing and using reusable bottles.

Accordingly, to develop design solutions towards the problems defined previously, the design challenge was described as: ***How can we reduce the existing obstacles, improve the user experience and motivate more purchase and usage of the reusable bottles among the target users?*** Furthermore, design approaches such as function analysis and morphological diagram were applied to generate potential product functions and their combinations as broad as possible. As a result, a requirement specification was concluded to outline the design criteria.

In the end, initial design ideas of the product shape and functions were developed during the design ideation. Next to this, three different design concepts were conducted. The final concept was selected by evaluating these three concepts against design requirements: a collapsible, reusable water bottle with multi-purpose use. This concept fulfills the users' need to use one product in different contexts with different purposes, such as drinking both water and tea. Moreover, the packaging as an influential factor motivates the user to refill. Lastly, the collapsible shape solves the dilemma of the large capacity and portability. It enables the user to carry it during commuting easily, and at the same time, use the large capacity bottle at the workplace or school.

For further development, it is recommended to develop a physical prototype of the final concept and have in-depth user tests to better evaluate the concept with the requirements. Moreover, quantitative user research should also be executed to further validate the current research results since the current user research is merely qualitative and the sample size is relatively small. Lastly, marketing and branding should also be considered to develop the conceptual design into a consumer product.

Reference

- China Water Risk. (2015). *BOTTLED WATER IN CHINA – BOOM OR BUST?* https://www.chinawaterrisk.org/research-reports/bottled-water-in-china-boom-or-bust-2015-eng/
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