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# Identifying and Addressing the Challenges of Mainstreaming the Menstrual Cup in Uganda

*A Master's Thesis in Humanitarian Logistics*

*Department of Industrial Management and Logistics, Lund University*

2017-06-02

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## Preface

The thesis concludes our Master of Science in Industrial Engineering and Management at Lund University, Sweden. The study was initiated during the fall of 2016 and conducted during the spring of 2017. The project has been both challenging and rewarding, and has given us many new insights in the developing context and how to approach unexpected obstacles along the way. We are grateful for the opportunity to contribute to theory and practice within a subject we are passionate about. We hope our study can contribute to an increased interest for further research on the menstrual cup in a developing context.

The project would not have been possible without the help and support from United Nations Population Fund and WoMena who helped us define a relevant project scope. Further, we would like to thank Julie Weigaard Kjaer, Laura Hytti and Samantha Musoke for their help to define the current market for menstrual cups in Uganda, and for providing us with contact information of other relevant people to interview. Additionally, we are especially grateful for the support from our supervisor at Lund University, Joakim Kembro, who has continuously motivated us to improve our research. Lastly, we would like to express our gratitude to everyone who have participated in the case study, without whom the result would not have been as extensive.

Lund, May 2017

  
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# Abstract

Menstruation is a normal body function and a sign of reproductive health. Although it is a fundamental human right for girls and women to have the ability to properly manage their menstruation, it is a long-neglected issue in low-income countries. Pilot studies have provided optimism for the menstrual cup's potential to improve the quality of life for Ugandan girls and women. Several actors are involved in creating a market for menstrual cups in Uganda, both commercially and through donations. However, there is barely any visible demand for the product. The study seeks to identify and address the challenges of mainstreaming the menstrual cup in Uganda by investigating challenges connected to creating demand and availability and suggesting how the identified challenges should be prioritized and addressed.

To achieve the purpose of the thesis, a literature review and a representative single case study were conducted. The literature review investigated the process of which new products are adopted, as well as previous research on challenges to create demand and availability in a developing context. A case study was conducted on the nature of the Ugandan market for menstrual cups. Eighteen interviews were conducted with representatives from current actors on the Ugandan market for menstrual cups, as well as people and organizations with relevant experience for an expansion of that market.

The thesis identified several challenges connected to creating demand and availability for the menstrual cup in Uganda. Challenges associated with creating demand were found to relate to limited affordability, acceptability, and limited awareness among both Ugandan girls and women as well as among decision-makers on higher levels. Challenges associated with creating availability were found to relate to poor infrastructure, difficulty to find service providers willing to push for the product and taking on the financial risk, regulations, and the lack of information.

To make the menstrual cup a mainstream feminine hygiene product in Uganda, extensive efforts as well as a coordination of these efforts is required. To enable coordination, the thesis suggests a three-step framework for prioritizing and addressing the identified challenges. The first step focuses on increasing awareness among women in Kampala and decision-makers. Further, regulatory issues must be addressed to enable an increased affordability and availability. The second step focuses on increasing availability in Kampala, increasing awareness through customized and national marketing, and increasing acceptance through involving influencers to do advocacy. Further, a partial payment model should be implemented to overcome the barrier of a perceived high price compared to substitutes. Lastly, the third step focuses on increasing availability in the Western, Central and Eastern regions.

**Keywords:** *Menstrual Cup, Developing Context, Developing Countries, Uganda, Menstrual Hygiene Management, Demand, Availability.*

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# 1. Introduction

Menstruation is a normal body function and is a sign of reproductive health (WASH n.d.). The average menstrual cycle is 28 days long and the menstrual period usually lasts from 2 to 7 days. Girls normally start menstruating when they are between the ages of 8 and 15 and continue to have their periods until they reach menopause, which normally occurs between the age of 45 and 55 (Women's Health 2017). During the years girls and women menstruate, they have a fundamental human right to properly be able to manage their menstruation (Phillips-Howard et al. 2015). Menstrual Hygiene Management refers to girls' and women's access to feminine hygiene products that absorb or collect the blood, that can be changed privately as often as needed, with soap and water present. Further, facilities where feminine hygiene products can be disposed are required for girls and women to be considered able to properly manage their menstruations (Sida 2016).

A feminine hygiene product that is rising on the agenda is the menstrual cup (Technavio 2017). The menstrual cup is made of medical grade silicon and worn inside the vagina during menstruation. Unlike tampons and sanitary pads, it collects the blood instead of absorbing it, which makes it a reusable product. The menstrual cup can hold three times the amount of blood a tampon can and only needs to be emptied every 6-12th hour (Sundqvist 2015) (Ruby Cup n.d. (1)). Additionally, the product lifetime of 10 years makes it a cost-efficient option which allows for cost savings to be realized after just one year (Beksinska et al. 2015). However, the big initial investment required for the menstrual cup, in comparison to other feminine hygiene products, makes the menstrual cup an unaffordable option for some. Further, the fact that the menstrual cup is inserted into the vagina implies that access to soap and water is required, and that the menstrual cup is not culturally appropriate in all settings (Mason et al. 2015; Beksinska et al. 2015).

In low-income countries, menstrual hygiene management is a long-neglected issue (Sommer & Sahin 2013). Girls may resort to using old cloths or minimal number of pads that leak and smell. The lack of access to feminine hygiene products can cause girls to drop out of school, or even prostitute themselves to afford pads (Phillips-Howard et al. 2016; Sundqvist 2015). Studies on the menstrual cup for schoolgirls in Africa provide optimism for the product's potential in these markets (Phillips-Howard et al. 2015; Phillips-Howard et al. 2016; Beksinska et al.). Girls expressed being free of embarrassing leakage, odor, and dislodged items compared to when using traditional materials. Ratings for the menstrual cup increased for every month of use and a high acceptance of the menstrual cup was identified, although the target group had limited experience with the tampon. When comparing the menstrual cup to pads, a clear preference for the menstrual cup was found (Beksinska et al. 2015).

Several actors have been involved in investigating the potential for the menstrual cup in Uganda, both through donations and commercially. The company Ruby Cup initially introduced the menstrual cup in Uganda through donation programs with various non-governmental organizations (Weigaard Kjaer 2017). In 2014, they introduced the menstrual cup commercially to the Ugandan market through a partnership with a Ugandan distributor, Samantha Musoke (Musoke 2017). Although pilot studies have shown potential for the menstrual cup in Uganda, the commercial uptake has been slow and today there is barely any visible demand for the product. For the menstrual cup to become a mainstream product for menstrual hygiene management in Uganda, demand and availability must be improved (Hytte 2016).

## 1.1 Purpose and Research Questions

The study seeks to identify the challenges of mainstreaming the menstrual cup in Uganda, and to propose a way forward by suggesting how they should be addressed. The purpose leads to three research questions investigating the challenges connected to creating demand and availability for menstrual cups in Uganda, as well as how the identified challenges should be prioritized and addressed.

**RQ1:** What challenges are connected to creating demand for menstrual cups in Uganda?

To create demand can be especially challenging when the product is relatively new and the market is immature (Sheth & Sisodia 2012). Therefore, when introducing a product to a new context, the challenges connected to creating demand must be identified. To answer the research question, the affordability, acceptability, and awareness among Ugandan girls and women is investigated.

**RQ2:** What challenges are connected to creating availability for menstrual cups in Uganda?

In many situations, the demand is successfully created, but managers are then unable to supply accordingly (Sheth & Sisodia 2012). Therefore, for the menstrual cup to become a mainstream alternative, the challenges connected to creating availability must be identified in order to meet potential demand. To answer the research question, the infrastructure, service providers, regulations, and information sharing is investigated.

**RQ3:** How should challenges connected to creating demand and availability for the menstrual cup in Uganda be prioritized and addressed?

To propose a way forward for the market for menstrual cups in Uganda, the challenges identified in RQ1 and RQ2 need to be prioritized and addressed. By prioritizing the challenges and suggesting suitable strategies, the most pressing issues can be better addressed with a coordinated effort from current and potential actors. To propose a suitable way forward, an understanding for how the menstrual cup is adopted is needed (Oster & Thornton 2012). Therefore, to answer the research question, the process of a new product becoming adopted is investigated.

Based on the research questions, the following research framework was developed.

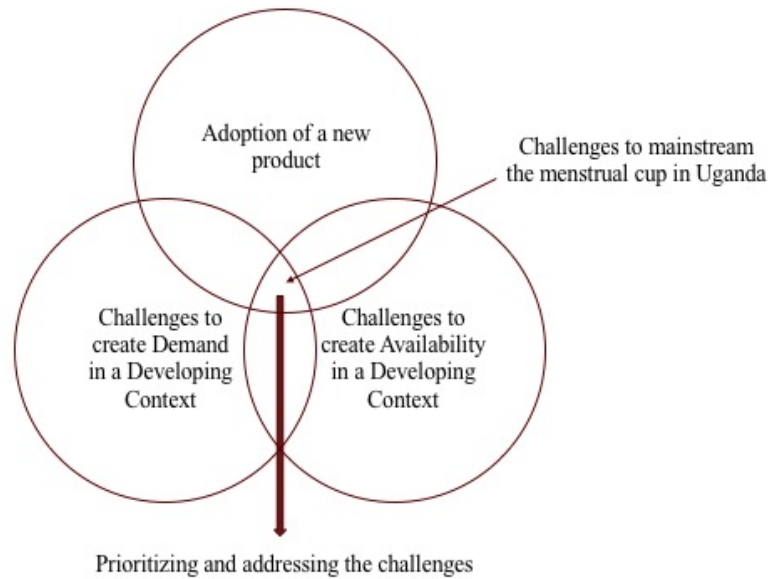


Figure 1. Research framework of the study. (Hagander & Velin 2017)

## 1.2 Delimitations

The project scope is restricted to Uganda and the identified themes of adopting a new product, challenges to create demand, and challenges to create availability. Whereas other aspects may also be valuable when investigating the mainstreaming of menstrual cups in Uganda, they have not been included due to the time limitation of the study. Further, costs have not been included when evaluating appropriate strategies to address identified challenges. The empirical study investigates the nature of the Ugandan market for menstrual cups, which is limited to include six actors: Ruby Cup, WoMena, Marie Stopes, Menstrual Cup Uganda, Women's Microfinancing Initiative, and community pharmacists. Other actors promoting the menstrual cup in Uganda may exist, but have not been identified during this study. Further, the study is limited to the menstrual cup, and other feminine hygiene products will not be investigated.

The case study was limited to include interviews with representatives from five of the current actors in Uganda, as well as United Nations Population Fund (UNFPA), Ministry of Health Uganda, Ugandan Health Marketing Group, MIT Humanitarian Response Lab, and individuals working with logistic functions in Uganda. Due to the early stage of the current market for menstrual cups in Uganda, and most current actors being non-profit organizations, the non-profit perspective was represented to a higher extent in the interview sample. Further, due to the time limitation of the study, combined with the study's purpose to investigate how to mainstream the menstrual cup in Uganda, the organizational perspective was emphasized in the interview sample rather than the user perspective. However, the user's perspective was included to some extent as one interviewee worked solely with training Ugandan girls and women to adopt the menstrual cup, and several interviewees have adopted the cup themselves. More potential interviewees were contacted to strengthen the commercial perspective, but unfortunately did not reply during the limited time of the study.



## 1.3 Disposition of the Report

The report is divided into six sections; Introduction, Literature, Method, Empirical Study, Analysis, and Conclusion. Section two describes relevant literature and provides a theoretical framework for identifying and addressing the challenges related to creating demand and availability when a product is to be adopted in a new developing context. Section three describes the methodology performed to achieve the purpose of the thesis. Further, section four consists of an empirical study, identifying the key challenges and strategies to create demand and availability for menstrual cups in Uganda. In section five the literature review and empirical study are connected and analyzed to answer the research questions. Lastly, section six will conclude the challenges of creating demand and availability for menstrual cups in Uganda, and how they should be prioritized and addressed to make the menstrual cup a mainstream alternative for menstrual hygiene management.

## 2. Literature

To address the research questions, a literature review has been conducted on the process of adopting a new product, and the challenges connected to creating demand and availability in a developing context. We searched for literature in two steps. First, searching was done in Google Scholar to gain an understanding for the field of study and relevant key words. These keywords were then used in the largest database of peer-reviewed literature, Scopus, to identify relevant sources of high quality. Additional literary sources were found through cross-referencing as well as through recommendations from United Nations Population Fund (UNFPA) and peers. The literature review generated a theoretical framework, aiming to provide a foundation for the case interview guide and structure of the empirical findings, as well as to serve as a tool for the analysis.

### 2.1 Adoption of a new product

The process by which innovations are adopted and used by people and organizations is called diffusion. The most influential model of the diffusion process is the Innovation Diffusion Theory, developed by Everett Rogers in the 1950s and 1960s (Dodgson et al. 2008). The Innovation Diffusion Theory explains how new ideas and products spread and whether they are accepted or rejected by a group of people (Rogers 2003). There are six factors that affect a customer's likelihood of adoption described in table 1.

*Table 1. The factors affecting a customer's likelihood of adoption. (Mohr et al. 2014)*

Factor	Description
Relative Advantage	The benefits of adopting the new technology compared to the costs and in relation to other alternatives
Compatibility	The extent to which adopting and using the innovation is based on existing ways of doing things and standard cultural norms
Complexity	The difficulty involved in using the new product
Trialability	The extent to which a new product can be tried on a limited basis
Ability to communicate product benefits	The ease and clarity with which benefits of owning and using the new product can be communicated to prospective users
Observability	The extent that benefits of the new products are observable to everyone

To understand how quickly an innovation can take off in the marketplace, the six factors must be evaluated and understood. The first factor, relative advantage, refers to the benefits that are perceived by the customer. It is not sufficient that the innovator believes the product to be better than alternatives, the customer must perceive that the product is worth the monetary cost and other costs of adoption it includes. The second factor, compatibility, refers to whether the customer will have to learn new behaviors in order to adopt and use the innovation. Products that are incompatible require more time and education to be adopted. Further, complex products have slower adoption and diffusion rates and require marketing communication strategies. The fourth factor, trialability, refers to the possibility of a customer to try the product for a limited time without commitment and can help reduce perceived risk. Next, if the product benefits can easily be communicated to prospective customers, the likelihood of more customers purchasing the product increases. For human health

products, it is especially important that evidence of product benefits can be communicated and that credibility is established. Last, observability refers to how observable the benefits are to the user, as well as to surrounding potential users (Mohr et al. 2014).

As people progress through the decision-making process of accepting or rejecting innovations, they can be divided into five categories of adopters based on a normal distribution. The five categories are innovators, early adopters, early majority, late majority, and laggards (Rogers 2003). Individuals may fall in different categories for different types of innovations (Mohr et al. 2014).

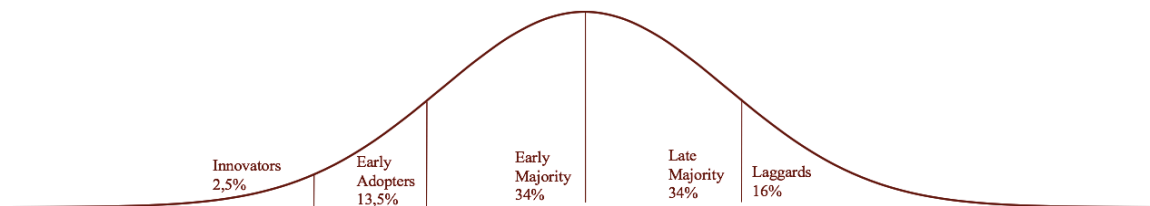


Figure 2. Classification of Adopters. (Rogers 2003)

Innovators are characterized as daring and act in circumstances of high levels of uncertainty (Dodgson et al. 2008). They are likely to be well educated and have considerable financial resources. Further, innovators tend to be highly exposed to mass media and large social networks (Smith & Findeis 2013). They actively seek innovations and may act as gatekeepers of new ideas into the system. Next, early adopters are often highly esteemed members of the community who often have the potential to influence others (Dodgson et al. 2008). Similar to the innovators, they are generally socially forward, well educated and financially well off. However, when compared to innovators, the early adopters tend to be more integrated in the local social system. Thus, early adopters often maintain a central position within one group, while innovators are more likely to bridge or spawn different groups (Smith & Findeis 2013). Next, the early majority interacts with opinion leaders, but are not leaders themselves. They have the willingness to adopt, but will avoid being the first to do so. Further, they are looking for reliable and proven products rather than revolutionary changes. In contrast, the late majority are sceptics who are unwilling to take risks, often due to limited financial means. They adopt new products by necessity or through peer pressure. Last, laggards are those who often lack the knowledge, skills, and resources necessary for adopting new products. They may wait until they are forced by regulators to adopt (Dodgson et al. 2008).

Reaching a new category of adopters poses a challenge, referred to as “crossing the chasm” (Moore 1998). The chasm exists between each category of adopters. The largest chasm exists when moving from early adopters to early majority, and appears when the early market is saturated, but the mainstream market is not yet ready to adopt the new product. A single target market, from which the mainstream market can be pursued, should be identified to successfully enter the early majority market. By identifying a smaller and specified segment, a high market penetration within the segment can be achieved and word-of-mouth effects will be enhanced. The identified segment should have strong incentives to buy the product. Further, the chosen segment should open doors into new segments, where customer needs are similar and word-of-mouth effects between the segments naturally occur. When segmenting the market, demographic, geographic and physiological variables should be considered. Demographic variables refer to income, gender and age. Further, geographical variables include deciding between urban versus rural areas and location. Lastly, psychological variables refer to the values and beliefs of the targeted segment (Mohr et al. 2014).

## 2.2 Creating Demand in a Developing Context

Basic needs of large parts of the population in developing countries are currently unmet because they are not considered to be able to pay for the products and services that would satisfy these needs. However, the populations of developing countries need to be viewed, not only as a segment to help, but as a segment to serve and target for specific products and services (Michelini 2012). Regarding health care specifically, the large amount of interventions that are currently under used suggests that the global health problems require managerial improvements rather than new interventions. Because the market is in an early stage of development, the growth in developing markets can potentially be very fast (Bhattacharyya et al. 2010). To create demand in a developing context, affordability, awareness, acceptability and availability of a product should be considered (Andersson & Billou 2007). As the next section in the literature review focuses on challenges to create availability, this section will be limited to affordability, acceptability, and awareness. The main challenges identified in literature regarding creating demand in a developing context are summarized in the table below.

*Table 2. Challenges to create demand in a developing context.*

Challenge Type	Key Challenges to create demand	References
Affordability	Customer's ability to pay	<i>Eyring et al. (2011), Michelini (2012)</i>
	Uncertainties in demand	<i>Bank (2016)</i>
	Acquisition of new customers is costly	<i>Michelini (2012), Simanis (2012)</i>
	High operational expenses	<i>Simanis (2012)</i>
Acceptability	Need for behavioral change	<i>Michelini (2012), Simanis &amp; Duke (2014)</i>
	Reluctance to adopt product due to extreme novelty	<i>Kasturi Rangan et al. (2011), Michelini (2012), Simanis &amp; Duke (2014)</i>
Awareness	Lack of product understanding	<i>Sánchez &amp; Ricart (2010)</i>
	Segmentation and targeting	<i>Al-Khatib et al. (2005)</i>

### Affordability

The customer value proposition must solve a problem more affordably than the alternatives. To increase the affordability of a product, expensive features and functions that people do not necessarily value need to be replaced with cheaper ones. In order to do so correctly, a deep understanding of the market is required, which can be done through collaborative fieldwork. Since affordability is a critical factor in developing countries, deciding on an acceptable price should be done directly after the customer value proposition is defined. Thereafter, decisions concerning processes and resources can be made to deliver the stated value at the targeted price (Eyring et al. 2011). Further, companies must be willing to rethink the way they produce and distribute their products (Michelini 2012). It is vital to be flexible and make quick adjustments to the business model through experimenting before any major operational or strategic investments are made (Eyring et al. 2011).

Choosing a cost minimizing strategy often includes a strong focus on economies of scale (Kasturi Rangan et al. 2011). To efficiently capture the financial benefits of such an approach, processes should be standardized (Akula 2008). The Gates Foundation managed to halve the price of

contraceptive implants by guaranteeing the suppliers that the sales volume would double in low-income countries within six years. A volume guarantee creates a more transparent market, mitigates risks and drives down costs. By eliminating uncertainties in demand, strong market forces were initiated (Banks 2016).

Whereas economies of scale can be an efficient way of reducing costs, the “low price, low margin, high volume” has proven to be a challenging approach in a developing context for several reasons (Simanis 2012). First, the limited ability to pay implies that flexibility in payments may be required. Second, each customer is only able to make a small purchase, meaning that many customers are required to cover the fixed costs (Gunther 2014; Pitta et al. 2008). Aravind Eye Care System has illustrated how a cross-subsidization strategy can create financial sustainability. By exploiting the ability and willingness of wealthier patients to pay higher prices, they can offer highly subsidized services for 70% of their patients (Bhattacharyya et al. 2010). Third, customer acquisition is a more resource intense activity in a developing context due to greater experienced novelty with new products. Therefore, customers need more information and education to adopt products (Simanis 2012). Last, operational expenses tend to be higher in developing markets since they are more dispersed, which complicates distribution and increases costs (Eyring et al 2011).

The terms affordability and perceived value are closely linked to a business model’s interactivity. Based on the pattern of entry into low-income markets, a business model can be considered isolated or interactive. An isolated business model implies that the firm individually and quickly identifies and exploits opportunities, with a strong focus on costs minimization. An interactive business model, on the other hand, implies that firm jointly with local actors identifies and exploits opportunities. The interactive business model focuses on increasing the willingness to pay, but keeping in mind the cost restraints. An isolated business model will be more efficient and can more effectively reduce costs. However, whereas the interactive business model is linked to greater uncertainties, it is likely to result in a higher sustainable competitive advantage (Sánchez & Ricart 2010).

### **Acceptability**

The acceptability of a product describes to what degree consumers and other actors in the value chain are willing to promote, sell or consume the product (Andersson & Billou 2007). One of the biggest challenges when entering a developing market is creating product acceptance and changing consumer behavior (Simanis & Duke 2014; Andersson & Billou 2007). People with limited means often experience extreme novelty in many products and do not always know how to use them correctly. Additionally, they tend to refuse new products due to the reluctance to changing deeply ingrained routines and mindsets (Simanis & Duke 2014; Micheline 2012). Informative campaigns can be used to encourage a certain behavior. Whereas this can be an effective way of creating awareness, several studies show that it is not enough to create an actual behavioral change. To truly create value for the customers, and thereby also for themselves as corporations, organizations must be willing to go beyond listening and create a deeper dialogue resulting in mutual learning (Micheline 2012). They must learn to engage communities in a way that is culturally appropriate in order to scale up customer loyalty and increase product acceptance (Akula 2008). Additionally, to support a new behavior, and tackle peer pressure and cultural issues, it can be useful to create consumer groups (Simanis 2012; Simanis & Duke 2014). Education concerning the product and product use may also be implemented to create an understanding of the product throughout the value chain, which can be transferred to the customer (Simanis & Duke 2014). Finding employees with sales skills and deep product knowledge can itself be considered a challenge, especially in contexts where illiteracy is high (Simanis 2012).

## **Awareness**

Awareness refers to the understanding of the product's existence and function (Andersson & Billou 2007). Many companies fail when entering a developing market because the awareness and understanding of product benefits are lacking. For example, Hindustan Unilever launched a water-purifier that could be used without electricity or running water. The problem was that many of the potential customers were unaware of the health benefits of purification and did therefore not see the value of the product (Kasturi Rangan et al. 2011). To enter a market and create product awareness, an aggressive approach is needed. Companies that already have products on the market might try to prevent the new product from entering and taking market shares (Moore 1998). Further, consumers may not have access to conventional media channels, which makes the process of building awareness increasingly challenging (Andersson & Billou 2007). Informative campaigns, in shape of billboards and leaflets, can be used to create awareness of a new product (Michelini 2012; Andersson & Billou 2007). The actual point-of-sales is suggested as an efficient placement for marketing. Further, product awareness can be spread through resellers, such as micro-entrepreneurs, and marketing activities, such as street performance, can be used to build brand awareness (Andersson & Billou 2007). For addressing taboo subjects concerning reproductive health specifically, using local humor or designing educational programs were identified as efficient methods (Bhattacharyya et al. 2010).

Once a product has been established on a market, it is important that word-of-mouth effects are enhanced, which is most efficiently done by targeting fewer and smaller segments. It is easy to lose focus and start chasing every opportunity, but if the customers are widely spread, it is unlikely that word-of-mouth effects will take off (Moore 1998). Since the market is more dispersed in a developing context, the risk of an inefficient word-of-mouth is even bigger (Simanis 2012).

## **2.3 Creating Availability in a Developing Context**

Availability refers to the extent to which customers are able to acquire and use a product (Andersson & Billou 2007). Depending on what availability the customer prefers, the related distribution costs of inventory, information, and transportation, can be adjusted (Chopra 2003). If a customer tolerates low availability, a company can supply to few locations far from the customer and focus on increasing capacity. If not, a company must supply to more locations closer to the customer (Rushton et al. 2014). The market in developing countries is particularly dispersed, creating a major challenge for companies to access the targeted customer segment. Failure in accessing the dispersed market is the main reason companies fail to launch in these markets (Eyring et al. 2011). To successfully launch in the developing market, the challenges to create availability must be investigated. Several challenges have been addressed in the literature, summarized in table 3.

Table 3. Challenges to create availability in developing countries.

Challenge Type	Key Challenges to create availability	References
Infrastructure	Unreliable and poor access to infrastructure	<i>Georgise et al. (2016), Fawcett &amp; Waller (2015), Sodhi &amp; Tang (2013), Jahre et al. (2012), Chikweche &amp; Fletcher (2011), Vachani &amp; Smith (2008)</i>
	Lack of formal distribution channels	<i>Sodhi &amp; Tang (2013), Jahre et al. (2012), Karamchandani et al. (2011, Andersson &amp; Billou (2007)</i>
	Last-mile distribution	<i>Sodhi &amp; Tang (2013), Karamchandani et al. (2011)</i>
Service Providers	Setting up, enforcing, and ending agreements	<i>Parmigiani &amp; Rivera-Santos (2015)</i>
	Misaligned incentives	<i>Parmigiani &amp; Rivera-Santos (2015), Afridi &amp; Ventelou (2013), Chikweche &amp; Fletcher (2011), Karamchandani et al. (2011)</i>
	Limited ability to carry stock	<i>Fawcett &amp; Waller (2015)</i>
Regulations	Regulations	<i>Fawcett &amp; Waller (2015), Parmigiani &amp; Rivera-Santos (2015)</i>
	Changing government policies	<i>Parmigiani &amp; Rivera-Santos (2015), Afridi &amp; Ventelou (2013), Koch et al. (2009)</i>
	Corruption	<i>Parmigiani &amp; Rivera-Santos (2015), Afridi &amp; Ventelou (2013), Koch et al. (2009)</i>
Information	Poor information sharing	<i>Georgise et al. (2016), Jahre et al. (2012)</i>
	Lack of data	<i>Georgise et al. (2016), Jahre et al. (2012), Vachani &amp; Smith (2008)</i>

### Infrastructure

The transport infrastructure, including roads, railways, warehouses, terminals, and ports, is a major determinant of the success of the distribution system (Hesse & Rodrigue 2004). However, unreliable and poor access to infrastructure, was one of the challenges mentioned most frequently in the literature. Distribution channels are fragmented or non-existent, and the task of simply getting products to the customer can be a major hurdle to overcome in a developing context (Andersson & Billou 2007). In urban areas, neighborhood retail stores are common. These are small, formal, commonly family owned retail stores that buy products from wholesalers to resell to the community (Chikweche & Fletcher 2011). However, a large proportion of the population live in remote villages that are inadequately connected by roads (Vachani & Smith 2008), making last-mile distribution an expensive activity (Sodhi & Tang 2013). Here, the market may be a couple of square meters of someone's house. Therefore, products need to be frequently delivered in small quantities, often single pieces, across a potentially expansive geography (Fawcett & Waller 2015).

### Service Providers

To increase availability in a developing context, it is recommended to collaborate with organizations that have extensive knowledge of the market (Karamchandani et al. 2011). There are two approaches for a company to set up distribution channels together with other actors. The first approach is to collaborate with service providers and local governments who already have established distribution channels. Through this approach, the company will likely be quicker to market. However, by cooperating with other organizations, a company may lose control (Parmigiani & Rivera-Santos 2015). Many companies have chosen to abandon such agreements due to different agendas and

opinions (Karamchandani et al. 2011). Due to the lack of formal enforcement institutions, like court systems, creating contracts to align incentives of all parties is challenging (Parmigiani & Rivera-Santos 2015). For organizations in the developing context, misaligned incentives in the following three categories are most common. First, there may be a mismatch in whether there should be a business or a social priority. Second, there can be operational differences and different standards for quality. Third, there can be a disagreement regarding the transparency of all parties and whether everyone show their true objective or not (Karamchandani et al. 2011). Additionally, when collaborating with local governments, the distribution may be distorted by political self-interest (Afridi & Ventelou 2013). Aligning incentives is especially difficult when the distribution handles a product that is expensive relative to the customer's purchasing power (Parmigiani & Rivera-Santos 2015). Further, an expensive product is challenging due to limited financing making actors reluctant to carry inventory along the distribution network (Fawcett & Waller 2015).

The second approach is to alone create a network of agencies and local entrepreneurs (Parmigiani & Rivera-Santos 2015). By setting up a hub in a larger village from which micro-entrepreneurs distribute to the more rural areas, the challenge of expensive last-mile distribution can be overcome (Sodhi & Tang 2013). Training of people from the local communities can increase product availability, reduce costs and empower the community. In case studies, laypeople were trained to distribute contraceptives, conduct eye exams and business operations (Bhattacharyya et al. 2010). If a company chooses to create its own network, it can retain control of the overall system (Parmigiani & Rivera-Santos 2015). However, this approach takes longer to implement and implies a higher risk (Parmigiani & Rivera-Santos 2015).

### **Regulations**

Divergent standards and regulatory uncertainty increases the costs and risks of serving consumers in developing countries (Fawcett & Waller 2015). Regulations in developing countries are made on both national and community level. On the national level, the government may change regulations and impose corrupt practices due to the lack of counter-powers. On community level, community-based decision makers such as elders and religious figures have significant impact on local rules. Therefore, regulations can be especially challenging in developing countries as regulations and influences can stem from two different, and potentially conflicting, levels of decision-making. Moreover, firms may worry about corruption, bribery, and confiscation of assets as government policies and regulations are unstable and unpredictable (Parmigiani & Rivera-Santos 2015).

### **Information**

The distribution in developing countries becomes especially challenging due to the inadequate flow of information regarding ordering, stock shortages and deliveries. Orders are often filled out on hard-copy order forms and physically transported through the chain (Jahre et al. 2012). The lack of information leads to a lack of visibility in the chain and poses a major challenge to planning the distribution which leads to excess inventory or stock-outs (Georgise et al. 2016). To avoid long lead times and human errors, electronic ordering should be implemented if possible (Jahre et al. 2012). Further, for information sharing along the distribution network, it is advised to treat distributors as partners. By appreciating the value of the distributors and their relationship with the end customer, and providing them with necessary support, a company can benefit and learn from the distributor's wealth of information about the customer needs and wants (Rushton et al. 2014). Such information can also affect forecasting methods. The distribution can either be based on actual demand or on long-term forecasts. For distribution to be based on true customer demand, information must be transmitted extremely quickly throughout the chain (Simchi-Levi et al. 2008).



## 2.4 Theoretical Framework

Relevant literature for this study has been presented in sections 2.1-2.3. As a result of the literature review, a theoretical framework for the challenges to create demand and availability for a product in a new developing context are concluded in figure 3. It aims to serve as a tool for identifying challenges and prioritizing them according to the different stages of adoption. The theoretical framework will act as a foundation for the case study questionnaire, structure of empirical findings and the analysis.

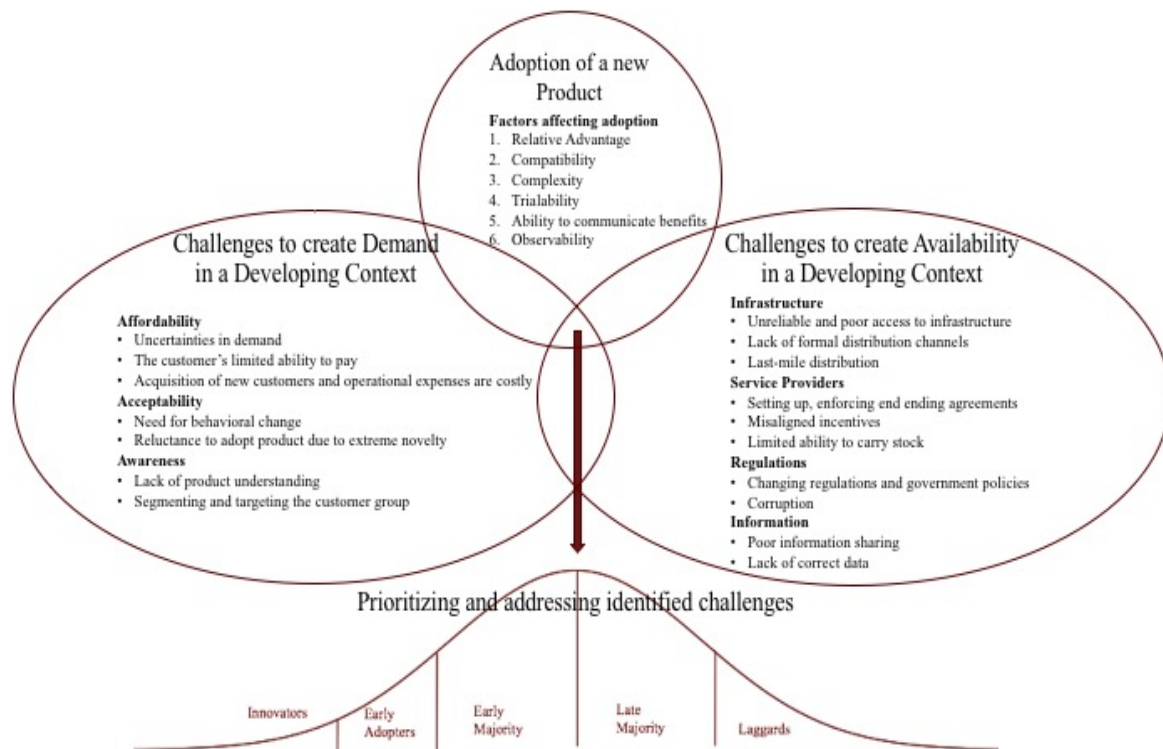


Figure 3. The theoretical framework for challenges to create demand and availability for a product in a new developing context. (Hagander & Velin 2017)

## 3. Method

### 3.1 Thesis Process

The thesis process consisted of seven main components, illustrated in figure 4.

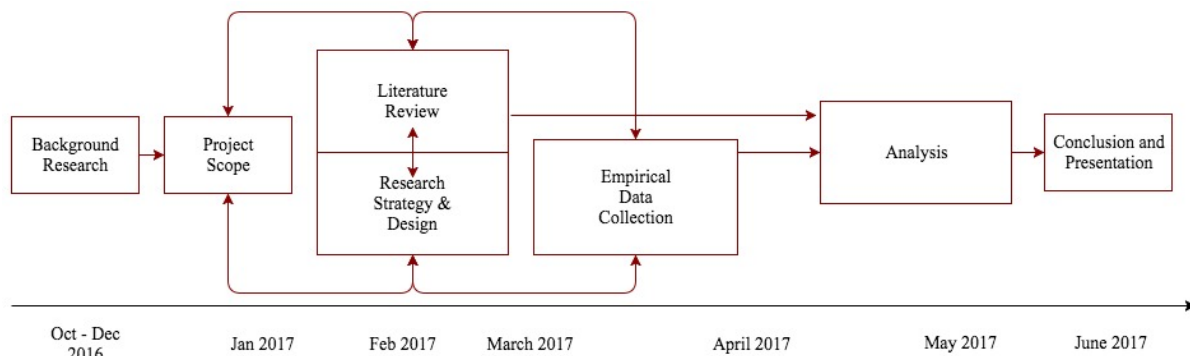


Figure 4. Visualization of the thesis process. (Hagander & Velin 2017)

Based on previous knowledge of the menstrual cup, we started discussing the potential of menstrual cups as an alternative for menstrual hygiene management with each other in October 2016. After including peers into the discussion, we thought the product could have great potential in developing countries where access to feminine hygiene products may be poorer and the taboo of menstruation may be large. Specifically, we considered the reusability, the low cost per use, and its large capacity to hold blood, to be beneficial in a developing context.

Following initial discussions, we conducted background research on the potential for menstrual cups in developing countries from October to December 2016. Several UN organizations were contacted via e-mail to understand their interest and experience on the topic. We searched for literary sources using keywords such as “Menstrual Hygiene Management”, “Developing Countries”, “Low-Income Countries”, “Developing Context”, and “Menstrual Cups”. We had multiple meetings with our supervisor Joakim Kembro, who has several years’ experience within humanitarian logistics. Further, contact with representatives from UNFPA was established. An initial Skype Interview with Ingegerd Nordin from UNFPA Copenhagen, Henia Dakkak from UNFPA New York, and Wilma Doedens from UNFPA Geneva, was conducted to discuss a relevant project scope for us to address. Through the Skype meeting, contact with representatives from the non-governmental organization WoMena in Uganda was established. A Skype interview with WoMena’s research coordinator Laura Hytti was conducted in December 2016, who confirmed an interest and potential for the menstrual cup on the Ugandan market.

Based on the background research, the project scope was defined. A project plan was conducted and sent to our supervisor and to our contacts within UNFPA and WoMena, to confirm the relevancy and feasibility of the project. Once the project plan was confirmed by all parties, we began formulating the literature review and the research strategy and design. As a result of the literature review, a theoretical framework was constructed that acted as a foundation for the following case study and analysis.

Following the literature review, empirical data was collected through a case study on the nature of the current market for menstrual cups in Uganda. The case study consisted of semi-structured interviews with representatives from the country office of UNFPA in Uganda, the NGO WoMena in Uganda, the CEO of Ruby Cup, and others who had valuable experience to our project scope. By using the “snowball” technique with initial interviewees, contacts for further interviews were provided. Data was analyzed and trends and themes of challenges were identified. Additionally, secondary data was collected to gain a thorough understanding of factors in Uganda influencing the market for menstrual cups. To make sure that we addressed the challenges for menstrual cups in Uganda in an appropriate way, valuable to all stakeholders, the study was performed as an iterative process. The project scope, literature review, research strategy and design, and case study were continuously reviewed and adjusted as the project progressed.

In mid-April 2017, the literature review and empirical findings were analyzed to identify the main challenges for menstrual cups in Uganda and addressing them to reach the different categories of adopters. The analysis discussed what challenges needed to be addressed, and in what order it should be done. From the analysis, conclusions were drawn and a way forward for the parties involved in the market for menstrual cups in Uganda was suggested. On June 2nd, 2017, the project was presented.

### 3.2 Research Strategy

Five commonly used strategies for conducting a research study are experiment, survey, archival analysis, history and case study. The research questions, as well as whether the research requires control of behavioral events and if it focuses on contemporary or historical events, determines which research method is appropriate. If the research questions are based on a “how” or a “why”, a case study could be a suitable research strategy (Yin 2014). In this thesis, neither RQ1 nor RQ2 contains a how or a why. However, RQ1 and RQ2 aims to explore challenges which implies that an underlying understanding of “why” is required. Further, since RQ3 aims to investigate how the identified challenges should be prioritized and addressed, a case study could be a suitable research strategy. However, when referring to *how* or *why* research questions, history or experiment should also be considered.

The purpose of the study demands a contemporary focus, rather than historical, implying that a case study or experiment might be suitable. Further, the purpose of the study required a real-life context, where events could not be controlled. An experiment requires control of events. A case study, however, does not (Yin, 2014). A case study was therefore chosen as the research strategy. Further, the fact that the research aims to be partially exploratory and partially theory building creates an additional argument for choosing a case study as a research strategy (Voss et al. 2002). Lastly, choosing a case study as a research strategy allows for several different types of sources of evidence such as documents, interviews, artifacts and observations, enabling us to involve several types of sources to answer the research questions (Yin 2014).

### 3.3 Research Design

#### Case Selection

The case study should be designed according to the purpose of the research. There are four types case designs summarized in the table below.

*Table 4. The four case research types. (Yin 2014)*

	Single case designs	Multiple case designs
Holistic	A single case with a single unit of analysis	Multiple cases, each containing a single unit of analysis
Embedded	A single case containing multiple units of analyses	Multiple cases, each containing multiple units of analyses

The multiple case study design is preferred when the case findings are to be generalized beyond the uniqueness of one setting and when time allows. The single case study design is more appropriate for representative studies when the objective is to capture circumstances and conditions of an everyday situation. A case study can also involve one or more units of analyses. The unit of analysis refers to the unit being studied in the case, and is fundamental to designing the case specific to any research (Yin 2014).

To address the purpose of the research, the unit of analysis for the case study is defined as the nature of the Ugandan market for menstrual cups. The unit of analysis can be divided into two parts. First, the Ugandan context and the environment in which the market exists. Second, the experiences of actors currently present in that market. Six actors have been included in this study: Ruby Cup, WoMena, Marie Stopes, Women's Micro-Financing Initiative, Menstrual Cup Uganda, and community pharmacists. The system for the case study is visualized in figure 5. The phenomenon investigated in the unit of analysis are the challenges connected to expanding the Ugandan market for menstrual cups.

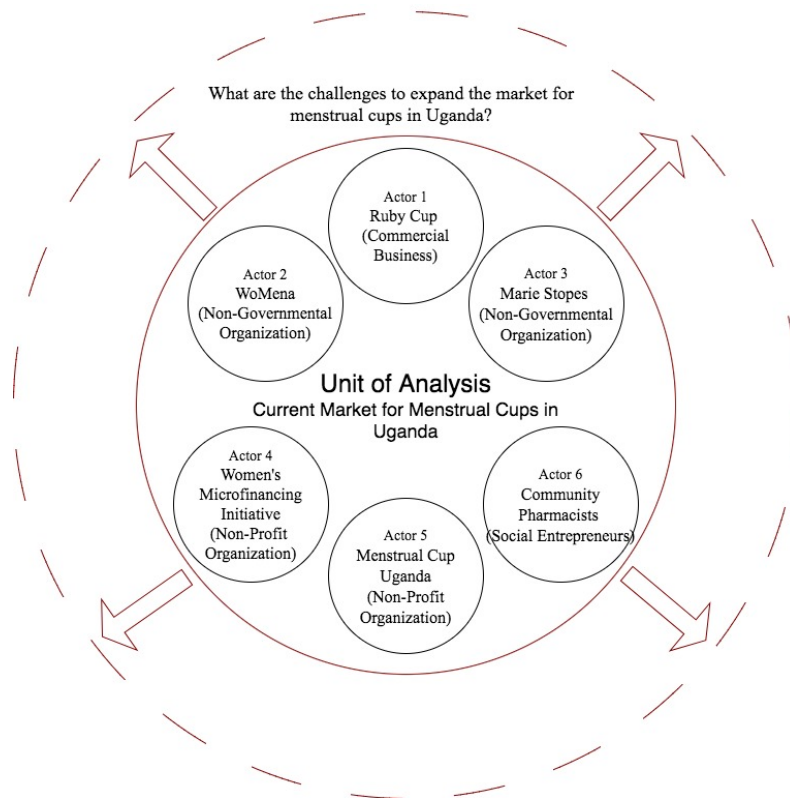


Figure 5. The case system. (Hagander & Velin 2017)

Understanding the market for menstrual cups in Uganda requires an understanding of everyday circumstances and conditions. Further, an in-depth understanding of the Ugandan market for menstrual cups was preferred over generalizability. Due to these factors, in combination with the time restriction of the study, the single case study design was chosen. Additionally, because of the single unit of analysis, the holistic single case design was chosen (Yin 2014).

## Case description

The case study aims to investigate the challenges associated with creating demand and availability of menstrual cups in Uganda as well as the adoption potential of the menstrual cup in the Ugandan context. This section aims to provide relevant background information to the case study by presenting the Ugandan context, the Ugandan market for feminine hygiene products, and the current actors present on the market for menstrual cups in Uganda. The Ugandan context is introduced through a short description of the geography and demographics of Uganda. The Ugandan market for feminine hygiene products is described through a presentation of the most common feminine hygiene products used in Uganda, their market shares and their price. Lastly, the current actors on the Ugandan market for menstrual cups are introduced. The current actors are Ruby Cup, WoMena, Marie Stopes, Women's Microfinancing Initiative, Menstrual Cup Uganda, and community pharmacists.

### The Ugandan context

Uganda is a landlocked country located in eastern Africa and borders to Kenya in the east, Tanzania in the south, Rwanda in the west, and Sudan in the north. It is located at the equator, about 800 kilometers inland from the Indian Ocean (Ugandan Bureau of Standards 2016). Uganda is divided into four regions: The Central, Western, Eastern, and Northern region. The four regions are divided into

districts. In 2010, Uganda was divided into 111 districts and one city, Kampala, which is the capital of Uganda (Government of Uganda n.d.). The majority of the population, about 85%, live in rural areas (Ministry of Health 2008). The population density for different districts is shown in figure 6.

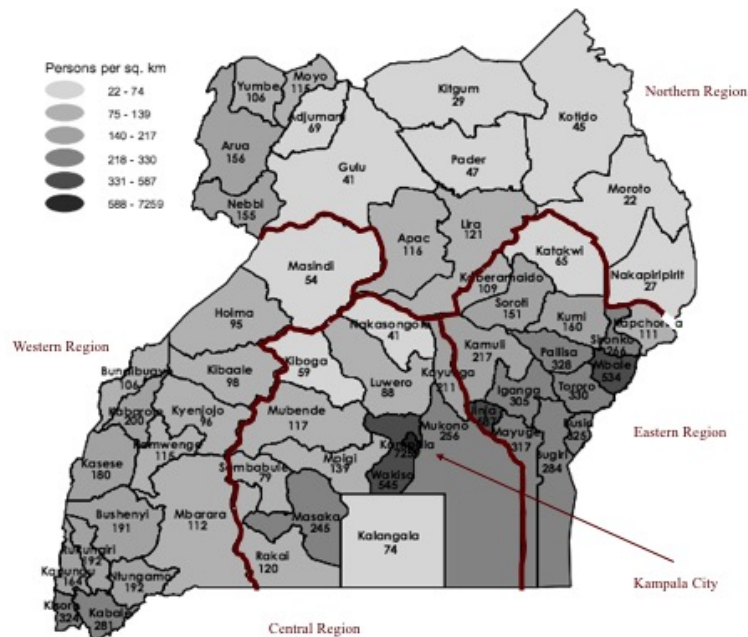


Figure 6. Population density in the different Regions of Uganda. (Ugandan Bureau of Standards 2002; Government of Uganda n.d., edited by Hagander & Velin 2017)

Uganda has a population of 41,5 million people with a population growth rate of around 3% per year (World Population Review 2017). By 2030 the population is expected to have increased to 61,9 million people, and to 101,9 million people by 2050. The population is considered young, with a median age of 15,9 years in 2015, which can be compared to the median age of 29,6 years worldwide (United Nations 2015).

The amount of people living below the national poverty line has declined from 31,1% in 2006 to 19,7% in 2013 (World Bank 2016 (1)). However, the national poverty line has been criticized for being set too low. According to the international poverty line, 34% of the population still lived in poverty in 2013 (World Bank 2016 (2)). Further, the country is still behind on several non-monetary areas (World Bank 2016 (1)). Uganda has one of the poorest achievements in gender equality today (UNDP 2015). More than half of the population agrees that spousal violence against women can be justified, depending on the circumstances, and a third of the population believes that the Ugandan woman currently does not have the same access to justice (OECD 2013).

### The Ugandan market for feminine hygiene products

Many Ugandan girls and women still lack the resources necessary to properly manage their menstruation. Over 65 percent manage their menstruations through own made solutions such as cloth pads, small towels or cotton wool. Disposable pads are used by 30 percent of the market, followed by re-usable pads which are used by three percent. Tampons are only used by half a percent of the menstruating population. Although vaginal insertion may be an issue for some Ugandan girls and women, it is not an issue in all areas of Uganda (B-Space 2014). The cost of the dominating menstrual

hygiene management methods in Uganda, and the cost of the menstrual cup, are presented in table 5. It can be observed that the menstrual cup is the cheapest option in terms of cost per menstruation. However, in terms of one-time purchase cost, the menstrual cup is by far the most expensive option.

*Table 5. Cost of different menstrual hygiene management methods in Uganda. (Hytti 2017)*

Feminine Hygiene Products	Cost per purchase	Duration of method	Cost per menstruation
Low-Cost Disposable Pads (TRUE)	0,55 USD	1,5 pack/month	0,83 USD
High-Cost Disposable Pads (Always Platinum)	1 USD	1,5 pack/month	1,49 USD
Reusable Pads (Ecopads)	3,32 USD	1 year	0,28 USD
Menstrual Cup (Price in Pharmacy)	19,36 USD	10 years	0,16 USD

### **Ruby Cup**

Ruby Cup is a Danish company selling menstrual cups made of 100 percent medical grade silicone and free from toxins, perfumes and bleaches (Ruby Cup n.d. (1)). The Ruby Cup is sold worldwide with a focus on the European and North American market. The company applies a “buy one, give one” strategy, which enables donation to girls and women in developing countries. The donation cups are distributed partly through their own Ruby Cup ambassadors and partly through NGOs located in Kenya, Uganda, and Tanzania. Further, Ruby Cup sells menstrual cups for a subsidized price of 10 dollars to some NGOs and commercial partners in Kenya and Uganda to encourage an increased demand and potential market for the cups (Weigaard Kjaer 2017).



*Figure 7. The Ruby Cup. (Ruby Cup n.d. (2))*

### **WoMena**

WoMena is one of Ruby Cup’s donation partners that distribute donation cups in Uganda (Weigaard Kjaer 2017). It is a Danish founded Non-Governmental Organization working with providing and implementing reproductive health solutions in low-income areas (WoMena 2016). WoMena’s activities have until now been centered around menstrual hygiene management, in particular projects connected to the menstrual cup. The majority of the projects have been, and are being, conducted in Uganda (WoMena n.d.).

### **Marie Stopes**

Marie Stopes is non-governmental organization that provides contraceptives and safe abortions to women in 37 countries worldwide (Marie Stopes International 2016). It is a well-known and trusted brand in Uganda (Hytti 2017), with 15 clinics cross-country (Marie Stopes Uganda 2015). Currently, Marie Stopes Uganda are conducting a project where they, together with WoMena, are selling menstrual cups to a subsidized price in peri-urban areas (Hytti 2017).

### **Women's Microfinance Initiative**

Women's Microfinance Initiative is a non-profit organization that provides capital, support services and training to low-income women in rural areas in East Africa (Women's Microfinance Initiative 2017). The organization is currently conducting a project where they sell menstrual cups to a subsidized price in a few rural areas in Uganda (Miner 2017).

### **Menstrual Cup Uganda**

Menstrual Cup Uganda is non-profit organization that distributes menstrual cups in Uganda to girls and women with disadvantaged socioeconomic backgrounds. Further, they provide training on how to use the menstrual cup in a safe way, as well as general information about menstruation and women's rights connected to reproductive health (Nakalema 2017).

### **Community Pharmacists**

Community pharmacies are the go-to place for many people in low income countries. In some settings, local private pharmacies may constitute the only health service that people come in contact with (Smith 2009). There has been an increase in the number of pharmacies across Uganda, although the vast majority are located in the urban areas. In 2010, there were 477 registered pharmacies in Uganda (UNIDO 2010). Currently, the menstrual cup is available in eight different pharmacies in Uganda, all located in Kampala (Hytti 2017).

## **Data Collection**

Data was collected during two time periods. First, a scoping study took place from October 2016 to December 2016. The scoping study consisted of database research on previous studies on menstrual cups in developing countries, and un-structured interviews with UNFPA and WoMena. No questions had been prearranged, but rather an open discussion took place to discuss a relevant and feasible project scope. Second, interviews were held and secondary data was collected during the period February to May 2017. Initially, interviews with representatives from WoMena, UNFPA, MIT Humanitarian Response Lab, and Ruby Cup were conducted. More interviews followed due to the "snowball" technique where the initial interviewees provided other contacts of interest for our research. The interviews were mainly qualitative and semi-structured (Yin 2011; Bryman & Bell 2011). An interview guide was used, which can be found in Appendix 8.1, complemented with relating and open-ended questions. Starting with general questions, the interviews then covered seven themes including challenges within affordability, acceptability and awareness, infrastructure, service providers, regulations, and information. All interviews were done by the two authors, one leading the interview and one taking notes. Two interviews were conducted as qualitative, structured interviews due to limited access to Skype. The questions were then sent to the interviewee via e-mail and answered in writing. Information on the interviews conducted can be found in table 6.



Table 6. Interviewees and interview purposes of the study.

Interviewee	Position	Type of Interview	Time	Date
Dr. Henia Dakkak, Wilma Doedens & Ingegerd Nordin	Technical Advisor Sexual and Reproductive Health (UNFPA New York), Technical Advisor Sexual and Reproductive Health (UNFPA Geneva) & Procurement and Supply Coordinator (UNFPA Copenhagen)	Un-structured over Skype	60 min	21 <sup>st</sup> of Nov 2016
Laura Hytti	Research Coordinator & Project Manager for MCMAP, WoMena Uganda	Un-structured over Skype	60 min	1 <sup>st</sup> of Dec 2016
Julie Weigaard Kjaer	CEO & Co-founder of Ruby Cup	Semi-structured over Skype	60 min	23 <sup>rd</sup> of Feb 2017
Ingegerd Nordin & Ines Cadahia	Procurement and Supply Coordinator, UNFPA Copenhagen & Procurement Assistant, UNFPA Copenhagen	Un-structured personal interview	60 min	24 <sup>th</sup> of Feb 2017
Mark Brennan & Tim Breitbach	Student and PhD at Massachusetts Institute of Technology, specializing in Supply Chain Management in developing countries	Semi-structured over Skype	45 min	28 <sup>th</sup> of Feb 2017
Sylvia Wong	Technical Specialist within Adolescent and Youth, UNFPA New York	Semi-structured over Skype	60 min	28 <sup>th</sup> of Feb 2017
Samantha Musoke	Ruby Cup Distributor, Uganda	Semi-structured over Skype	75 min	14 <sup>th</sup> of March 2017
Laura Hytti	Research Coordinator & Project Manager for MCMAP, WoMena Uganda	Semi-Structured over Skype	60 min	15 <sup>th</sup> of March 2017
Penninah Kyoyagala-Tomusange	National Programme Officer for Adolescent and Youth Sexual and Reproductive Health and Rights, UNFPA Uganda	Semi-structured over Skype	40 min	15 <sup>th</sup> of March 2017
Shamirah Nakalema	Field Officer for Menstrual Cup Uganda and Master Trainer for WoMena	Semi-structured over Skype	30 min	16 <sup>th</sup> of March 2017
Laura Hytti	Research Coordinator & Project Manager for MCMAP, WoMena Uganda	Semi-structured over Skype	60 min	20 <sup>th</sup> of March 2017
Kirsten Miner	Resource Fellow, Women's Microfinancing Initiative, Uganda	Semi-structured over Skype	30 min	21 <sup>st</sup> of March 2017
Deen Mohammed	Logistics Manager, Mandela Group, Uganda	Structured via E-mail	N/A	24 <sup>th</sup> of March 2017
Marjon Castelijns	Former Logistics Specialist, UNICEF Uganda	Semi-Structured over Skype	45 min	28 <sup>th</sup> of March 2017
Angela Semanda	Community pharmacist and Social Entrepreneur in Uganda	Semi-structured over Skype	30 min	28 <sup>th</sup> of March 2017
Phoebe Muathe	Finance and Admin, Kenfreight Group, Uganda	Structured via E-mail	N/A	30 <sup>th</sup> of March 2017
Gofrey Nsereko & Rogers Sebukyu	In-Charge Pharmacist and Warehouse and Operations Manager, Ugandan Health Marketing Group, Uganda	Semi-structured over Skype	45 min	10 <sup>th</sup> of April 2017
Lawrence Were	Reproductive Health Commodity Security Coordinator, Ministry of Health, Uganda	Semi-structured over Skype	30 min	18 <sup>th</sup> of April 2017

Five interviews were expanded with a short questionnaire via email in May 2017. The questions aimed to create a deeper understanding for the menstrual cup and its likelihood of being adopted in by Ugandan girls and women, and can be found in Appendix 8.2. Due to the product and environment specific nature of the questions, the complementary questionnaire was only sent to the interviewees currently active in the market for menstrual cups in Uganda: Laura Hytti, Shamirah Nakalema, Angela Semanda, Kristen Miner, and Samantha Musoke.

The secondary data was collected from sources such as the World Bank, Logistics Capacity Assessment, Ugandan Bureau of Standards, and the Ugandan Government, to gain a deeper understanding on the case environment. The search for secondary data is visualized in figure 8.

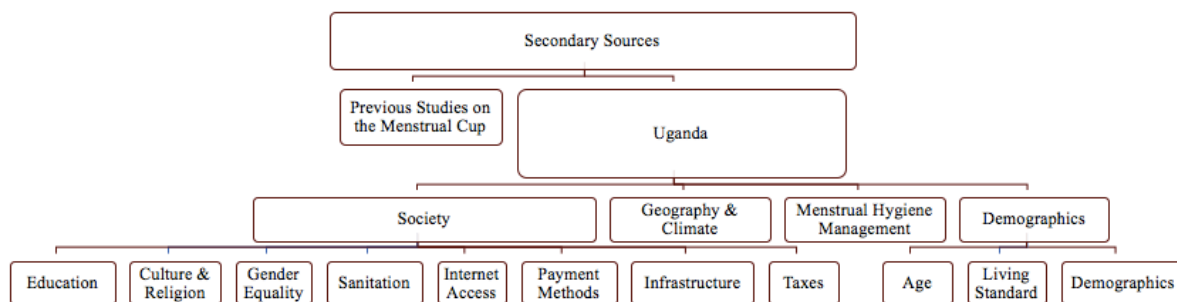


Figure 8. Categorization of Secondary Data. (Hagander & Velin 2017)

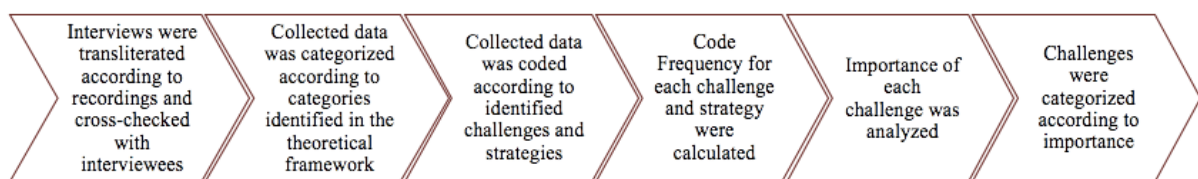
## Data Analysis

### Analyzing the Case Study

The first step of the data analysis should be to analyze the pattern of the data within the case study to obtain the deep understanding necessary before comparing with other data. A useful starting point for analyzing the data within the case study is to construct an array of collected data. By presenting information systematically, valid conclusions can be drawn (Voss et al. 2002). To construct such an array, interviews were transliterated according to recordings and cross-checked with interviewees to confirm that they were correct and accurate. The data collected was categorized according to the categories identified in the literature review: affordability, acceptability, awareness, infrastructure, regulations, service providers, and information. Following the categorization, the data was coded by theming data. Theming data refers to using phrases or sentences to describe or capture the meaning of data (Saldana 2013). Using that coding method, 25 challenges and 22 strategies were coded. Next, we calculated the code frequencies of each challenge and strategy. Code frequency refers to how many times a code occurs within the collected data (Saldana 2013). The identified challenges and strategies and their frequencies can be found in Appendix 8.3.

Following the coding and code frequency, categories should be generated and examined to identify themes (Saldana 2013). To lay a foundation for addressing the research questions of the study, identified challenges were categorized according to their importance. The higher code frequency a challenge had, the more important it was evaluated to be. However, the semi-structure of the interviews and the knowledge of interviewees had to be taken into consideration. Since the interviews included open-ended questions and interviewees had different backgrounds and experience, the interviewees who did not identify a challenge did not necessarily neglect it. Therefore, when categorizing challenges according to importance, we could not simply use the code frequency of each

challenge. Instead, we evaluated which interviewees that were considered to have the knowledge required to identify the challenge at hand. For example, the interviewees Deen Mohammed, Marjon Castelijns, Mark Brennan & Tim Breitbart, and Phoebe Muathe were not familiar with the menstrual cup, but rather with logistic functions in Uganda. Therefore, they were excluded when analyzing the importance of several product specific challenges. Further, single interviewees were sometimes excluded due to language barriers and not having had the opportunity to address every question properly. The importance of each challenge was defined as the number of interviewees that mentioned the challenge divided by the number of interviewees that could mention the challenge. Challenges were categorized into four categories of importance. High importance referred to challenges that were mentioned by 75-100% of the interviewees considered able to mention it. Medium-High represented those challenges mentioned by 50-75%, medium-low by 25-50%, and low by 0-25%. The categorized challenges according to importance, and which interviewees that were considered for each challenge, can be found in Appendix 8.4.



*Figure 9. The analysis process of the case study.*

### **Analyzing the Literature Review and the Case Study**

The analysis of the literature review and the case study was based on the structure of the theoretical framework. The theoretical framework serves to ground the study in relevant previous work and give a clear sense of the approach to analyze the phenomena of the study (Maxwell 20015). The theoretical framework was designed to first analyze the current situation of the menstrual cup and its likelihood of adoption, and the key challenges to create demand and availability in Uganda. Second, a way forward could be analyzed by applying findings from the literature review and case study to Roger's (2003) Innovation Diffusion Theory.

To analyze the current situation, the coded empirical data and the code frequencies were categorized to identify themes in Mohr et al.'s six factors affecting likelihood of adoption for the menstrual cup. The aim of the analysis was to gain an understanding of whether the current values of the six factors for the menstrual cup in Uganda could be improved or not. Categorizing the empirical findings according to their possibility to affect each factor required identifying relationships between the 24 identified strategies and the six factors of relative advantage, compatibility, complexity, trialability, communication, and observability. One way of identifying relationship between codes is by analyzing the occurrence of how a group of codes happened (Saldana 2013). By analyzing the occurrence of mentioned strategies, and understanding what challenges they aim to address, each strategy could be connected to the factor it would affect if implemented. The importance of the challenges addressed, calculated in the data analysis of the case study, represented the potential impact a strategy would have on a factor if implemented. The mapping of strategies to factors and challenges, and the calculation of potential impact, can be found in Appendix 8.5.

Following the analysis of the six factors, the current situation was analyzed by using pattern-matching. Pattern-matching compares predicted patterns with observed empirical patterns and can be a useful strategy when analyzing qualitative data (Yin 2014). First, empirical findings were analyzed

to define the five segments of adopters for the menstrual cup in Uganda: Innovators, early adopters, early majority, late majority, and laggards. The definition of segments was visualized and compared to Roger's (2003) Diffusion Innovation Theory. Further, pattern matching was used to identify key challenges to create demand and availability for menstrual cups in Uganda. Key challenges identified in the literature review were compared to key challenges identified in the case study, and trends and gaps were discussed.

Once the current situation had been analyzed, key challenges were prioritized according to reaching the five segments of adopters defined, and relevant strategies to reach each segment were discussed. The discussion resulted in a three-step framework for how strategies should be implemented to address prioritized challenges. To gain an understanding for how the three-step framework improves the likelihood of menstrual cups becoming a mainstream alternative in Uganda, the effect of the three-step framework on availability and demand was analyzed. The effect on demand was analyzed by first analyzing the effect on Mohr et al.'s (2014) six factors. The analysis was done similarly to the previous analysis of potential impact on the six factors. However, instead of representing a third dimension of potential impact, the impact of each suggested strategy in the three-step framework was now added to the existing value of each factor. The values had to be adjusted to the scale of the initial values ranging from one to five. To adjust the values, and thereby represent a realistic improvement of each factor, each impact value was divided by 12. The mapping of the strategies to relevant factors and challenges, and the calculated impacts, can be found in Appendix 8.6.

Once the impact on the six factors had been established, the effect on demand could be analyzed. The importance of the six factors, that had been established in the case study, were used to weigh how the impact of each factor would affect the total demand. The six factors were listed together with their importance and their impacts. Importance was multiplied with the impact for each factor and each step of the three-step framework. The sum of the resulting values was divided by six and the resulting average represented the improvement in demand. To enable improved demand to be visualized in the same figure as the improvement of the six factors, and thereby be represented on the same axis ranging from 1 to 5, the improvement in demand was scaled down by six. The calculation for improved demand can be found in Appendix 8.7.

### 3.4 Research Quality

Quality measures and strategies to ensure quality during the different research phases have been summarized in table 7.

*Table 7. Ensuring validity and reliability of this study. (Yin 2014, edited by Hagander & Velin 2017)*

	Design	Case Selection	Data Collection	Data Analysis
<b>Reliability</b> (the same results will be achieved when repeated)	The research strategy and data collection methods are described in detail	Case was selected based on triangulating interviews and secondary data	Interviews were transliterated and a case study database was created	Transliterations were cross-checked with interviewees and coding processes are described in detail
<b>Internal Validity</b> (understanding of how circumstances may lead to other conditions)	Research framework was identified	N/A	Same questions for different interviewees. Semi-structured interviews with open-ended questions	Patterns were matched and differences addressed. Triangulation of interviews and secondary data
<b>Construct Validity</b> (establishing correct operational measures)	Continuous meetings with supervisor. Literature review based on the research framework, and interview guide based on the literature review.	N/A	Multiple sources of information	Choices of coding and themes were well motivated
<b>External Validity</b> (generalizability of findings)	N/A	Clear description of case interviewees and organizations	N/A	N/A

To ensure reliability, the research strategy and data collection have been described in detail in the report, and all decisions have been clearly motivated. The case study was chosen by triangulating information from interviews and previous theory to ensure relevancy and feasibility of the project. Interviews were transliterated and all collected data was saved in a case study database to ensure that all data was included and that it could be shared with others if necessary. When analyzing the data, transliterations were cross-checked with interviewees to confirm that they were correct, and coding processes were described in detail and are included in the appendix.

To ensure internal validity, and an understanding of relevant variables and their relationship, three themes were identified and motivated to be of interest to address the research questions: adoption of a new product, challenges to create demand in a developing context, and challenges to create availability in a developing context. A research framework was created and used to guide all sections of the report. The same interview guide was used for different interviewees to enable multiple explanations. Further, interviews were semi-structured and questions were open-ended. Thereby, an understanding of how the circumstances for the menstrual cup in Uganda leads to certain challenges, and what strategies that are appropriate, could be obtained. During the data analysis, patterns from the theoretical framework were compared with patterns observed in the case study and differences were addressed. Further, the data collected during interviews was triangulated with data from secondary sources to deepen the understanding for the conditions and circumstances.

To ensure construct validity, we had continuous meetings with our supervisor Joakim Kembro to ensure that the research design addressed the research questions in an appropriate way. Further, a clear chain of evidence was established by creating the interview guides based on the literature review, which in turn was based on the three themes of the research framework. Thereby, it could be ensured that all sections were of relevance to the project scope. Data was collected from both interviews and secondary sources and the choices of coding, and how themes were identified based on the codes, were well motivated.

Lastly, low external validity is a risk when choosing a single-case design (Yin 2014). To strengthen the external validity, the interviewees are described in the methodology to ensure an understanding for who have been included in the report and what their experiences are. Further, the organizations included in the case study, as well as the Ugandan context, are described. By clearly understanding the case specific actors and context, an idea for when the findings can be applicable in other situations can be obtained.

## 4. Empirical Findings

The empirical findings consist of three sections. The first section concerns the adoptability of the menstrual cup in the Ugandan context, the second describes challenges connected to creating demand and the third the challenges connected to increasing availability for menstrual cups in Uganda. Following the theoretical framework, the challenges related to creating demand have been categorized into affordability, acceptability and awareness and the challenges related to availability through infrastructure, service providers, regulations and information.

### 4.1 Likelihood of Adoption

This section of the empirical findings is based on the theory of a product's likelihood to be adopted when introduced to a new context. A short questionnaire was sent out, where the extent to which the menstrual cup fulfils each of the six factors affecting likelihood of adoption were rated. Further, the factors were ranked according to their importance for the menstrual cup being adopted. The result is presented in table 8 and 9 and illustrated in figure 10.

*Table 8. To what extent the menstrual cup fulfils each factor in Uganda, rated from 1-5 (1 being the lowest/most complex, 5 being the highest/least complex)*

Factor/Interviewees	Semanda	Hytti	Nakalema	Miner	Musoke	Total/5
Relative Advantage	4,5	3	4	3	5	3,9
Communication	1,5	4	5	3	5	3,7
Observability	3	3	5	2	3	3,2
Complexity	2,5	3	2	2	4	2,7
Compatibility	2,5	4	3	1	2	2,5
Trialability	1	4	2	1	2	2

The relative advantage was rated the highest among the factors affecting likelihood of adoption. It is mainly due to the cost effectiveness that the product life time of 10 years implies (Hytti 2017; Nakalema 2017). Additionally, studies conducted in a developing context comparing the menstrual cup to sanitary pads have shown a preference for the menstrual cup (Beksinska et al. 2015; Mason et al. 2015). The cup was rated better by comfort, blood collection, comfort and preference (Beksinska et al. 2015). Further, the menstrual cups were associated with lower bacterial vaginosis prevalence among girls who had used the product for nine months or more, compared to the girls that were given pads and to the control arm (Mason et al. 2015).

Compatibility to the Ugandan culture and customs was considered limited due to the generally limited experience with feminine hygiene products that require insertion into the vagina (Musoke 2017). However, Hytti (2017) argues that the menstrual cup is more compatible to Ugandan customs than what is perceived, and that the adoption of the product does not require any significant changes. Further, Nakalema (2017) states that cultural norms and the issue of insertion is becoming less of an issue, and Hytti (2017) emphasis that the issue of virginity often can be overcome through education. In a study conducted in rural western Kenya the issue of virginity was predicted to be a problem and

the size of the cup created an initial negative response. However, the issue of virginity did not prove to a barrier for the study and, after education about the menstrual cup and how to use it, neither was the size (Mason et al. 2015).

Regarding the complexity involved with using the menstrual cup, Mosuke (2017), Nakalema (2017) and Hytti (2017) confirm that there is an initial learning curve, but after the few months, the product is easy to use. Further, Hytti (2017) describes that the cup is perceived as complex, but with practice it will make daily activities simpler. Due to the lack of access to sanitation facilities in Uganda (Ugandan Bureau of Standards 2016), the menstrual cup is often perceived as a complicated menstrual management method (Hytti 2017). However, Weigaard Kjaer (2017) argues that the barrier of complexity can to a large extent be overcome. The menstrual cup can be boiled in a tin with less than half a liter of water, and be kept inside the vagina for a longer period of time than other feminine hygiene products (Weigaard Kjaer 2017). However, if the cup is not boiled between periods, there is a risk of E. coli growth (Phillips-Howard et al. 2016).

The menstrual cup received the lowest value for trialability, since the product must be purchased to be tested (Miner 2017). Further, Mosuke (2017) explains that the high upfront cost makes trialability increasingly difficult. Regarding the ability to communicate product benefits, Hytti (2017) describes that the low cost and benefits can be clearly communicated, however, dealing with fears related to cultural perceptions can make the communication of these benefits challenging. Last, Mosuke (2017), Hytti (2017) and Nakalema (2017) state that benefits are very observable to the user. However, Mosuke (2017) describe that due to the taboo surrounding menstruation, the extent to which other can observe the benefits of the menstrual cup is limited.

*Table 9. Importance of each factor for the menstrual cup in Uganda, ranked from 1-6 (1 being the least important, 6 being the most important)*

Factor/Interviewees	Semanda	Hytti	Miner	Musoke	Total/4
Relative Advantage	3	6	6	6	5,3
Observability	6	5	3	1	3,8
Communication	5	4	4	5	4,5
Compatibility	2	3	5	4	3,5
Complexity	4	2	2	2	2,5
Trialability	1	1	1	3	1,5

As shown in table 9, relative advantage was considered the most important factor for the menstrual cup to be adopted by the Ugandan woman, followed by the extent to which the benefits of the product are observable to the user and her surroundings. Trialability was considered the least important factor and was ranked as least important by three of the four respondents. In figure 10, the combined results from table 8 and 9 are visualized.



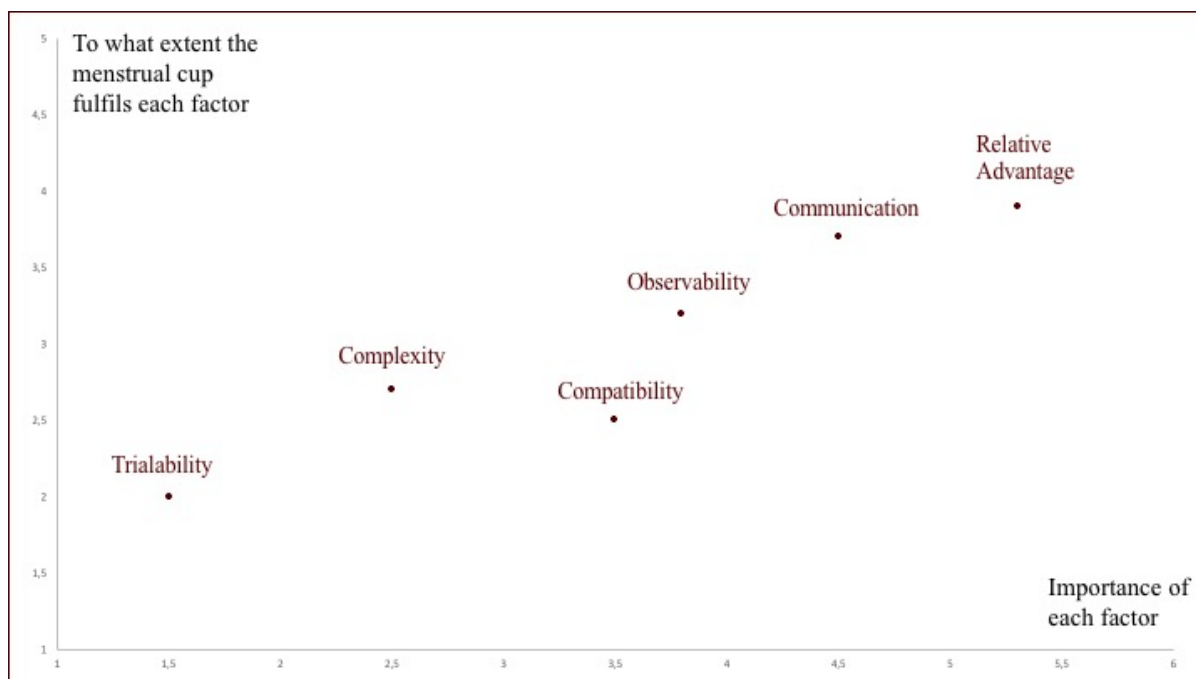


Figure 10. Average fulfilment and importance of each factor for the menstrual cup in Uganda. (Hagander & Velin 2017)

Figure 10 shows an almost linear pattern. The factors considered more important, such as relative advantage, communication, and observability, were also considered to fulfil each factor to a higher extent. Trialability, complexity and compatibility showed poorer results and were considered less important.

## 4.2 Creating Demand

### Affordability

The price people can afford and are willing to pay varies across Uganda (Hytti 2017). Whereas poverty has decreased in all regions of Uganda, the decrease has been significantly slower in the Northern and Eastern regions resulting in the poverty being increasingly concentrated in these areas. In 2006, 68 percent of the poor were found in the north and east. By 2013, the percentage of poor living in these regions had increased to 84 percent (World Bank 2016 (2)). The table below presents the average monthly income for different regions in Uganda.

Table 10. Average Monthly Income by Region and Residence. (Ugandan Bureau of Statistics 2010)

	Urban	Rural	Total
Kampala	264 USD	-	264 USD
Central	166 USD	93 USD	107 USD
Eastern	99 USD	42 USD	47 USD
Northern	100 USD	32 USD	39 USD
Western	132 USD	78 USD	84 USD

The current unsubsidized market price for the menstrual cup in Uganda is between 16,5 to 22 USD (Hytti 2017; Nakalema 2017; Semanda 2017). Musoke (2017), Hytti (2017) and Semanda (2017) describe that the middle and upper class would buy it at this price if they saw the value of it, but that the mass outreach could not afford it even if they wanted to. Further, Hytti (2017) explains that the price of the menstrual cup is perceived as high in relation to its substitutes, confirmed by Were (2017), Mosuke (2017), Nsereko & Sebukyu (2017) and Kyoyagala-Tomusange (2017). If the potential customer is currently using a disposable alternative, such as pads, the product lifetime of 10 years makes the menstrual cup a financially wise investment. However, the high investment cost implies that it is perceived as an expensive, or even unaffordable, option. It is therefore possible that a cheaper and lower quality product might be considered a more desirable alternative (Hytti 2017). Semanda (2017) and Mosuke (2017) suggest that implementing a partial payment model could make the menstrual cup affordable to a larger part of the population. However, for a partial payment model to be possible, an actor who is willing to take on the financial risk needs to be identified (Semanda 2017). Further, it must be acknowledged that the lowest income group may not be used to spending money on feminine hygiene products at all. Therefore, the menstrual cup may seem unaffordable to them regardless if partial payments were to be implemented (Hytti 2017).

Finding the right price point has proven to be difficult. The price needs to be set low enough for it to be affordable, but not so low that it is perceived as a low-quality product and the value of the product risks being overlooked (Weigaard Kjaer 2017; Mosuke 2017). Mosuke (2017) describes that no one wants to put something inside their bodies if they think that the quality is low. However, if the customer sees enough value in the product, she will find a way to buy it (Mosuke 2017). In Buyobo, a low-income rural area in eastern Uganda, the cup is sold for 1,5 USD but there is still no observed demand (Miner 2017). Miner (2017) believes that the price of 1,5 USD is very affordable, but the perceived value of the menstrual cup is lacking.

Saleswomen at Marie Stope are selling the menstrual cup for 7 USD in small scale across Uganda. At this price, sales in Central and Western parts of Uganda have been significantly higher than in the Eastern and Northern regions. Thus, 7 USD could be a good price point in the Central and Western region, but may not be the right price point in the Eastern and Northern regions (Hytti 2017). Further, Hytti (2017) describes that in Karamoja, Northern Region, the price point of 4 USD has also been tested which lead to higher sales compared to when it was sold for the price of 7 USD. Additionally, WoMena is currently trying several different pricing strategies in the same area. In Arua, Northern Region, the menstrual cup is being sold in urban clinics for 12,5 USD, sold by the Marie Stopes ladies for 7 USD, and is being donated in schools (Hytti 2017). There is a risk connected to multiple price points since people will not want to pay for a product that someone else is able to buy for a lower price or get for free (Brennan & Breitbach 2017). Whereas high risks are associated with donating a product that you one day aim to sell (Brennan & Breitbach 2017), the donation could also be a demand creating activity (Hytti 2017; Nsereko & Sebukyu 2017). Trying to do both at the same time is, however, unlikely to be a successful approach (Nsereko & Sebukyu 2017). A way to get around the issue of deciding between a donation or sales model, or between different price points, is through geographical spread (Brennan & Breitbach 2017).

Currently, independently of where in Uganda, there is no viable business model for menstrual cups. Convincing a customer to buy the menstrual cup is a resource intensive activity. Then, after the sale, it will take ten years until they might want to buy another one. The demand is not high enough to cover the fix costs that the model implies (Mosuke 2017). Additionally, the currently low demand implies that the cup is imported in small quantities and the costly process makes lowering the price or raising

the profit margin a challenge (Hytti 2017). If, however, a volume guarantee could be set, the price could be lowered and the chances of a partner deciding to subsidize the product will increase (Were 2017).

### **Acceptability**

When the menstrual cup is introduced in a new context, initial skepticism is often observed (Semanda 2017; Weigaard Kjaer 2017; Hytti 2017; Miner 2017; Musoke 2017; Nakalema 2017; Were 2017; Nsereko & Sebukyu 2017). Nakalema (2017) explains that the skepticism is enhanced in low income segments where education is limited. In Uganda, less than three fourths of the population over the age of 15 are can read and write (UNICEF 2013). Further, 56 percent of youth in the ages of 15-24 have a completed primary education. Only 4 percent of youth in the ages of 15-24 pursue a higher level of education after upper secondary school (Education Policy and Data Center 2014). However, 44 percent of all enrolled students are females, and the number of female students is growing. More than half of the universities are located in the Central region, and the Northern region continues to be the most disadvantaged in terms of institutional locations (National Council of Higher Education 2010).

The skepticism the menstrual cup faces has a strong connection to the fact that the menstrual cup needs to be inserted into the vagina (Semanda 2017; Hytti 2017; Mosuke 2017; Nakalema 2017; Were 2017). Shamirah Nakalema (16th of March 2017) states: “Most Africans treasure virginity very much. They think it is very inconvenient to insert something into the vagina and are afraid that it will tear the hymen, which most people define as virginity”. The first time a woman has sexual intercourse, the hymen can partially or completely break, which may cause bleeding. However, less than half of all girls and women bleed the first time they have sexual intercourse. Activities such as gymnastics or cycling may cause tears in the hymen. Further, some girls are born with so little hymen tissue that it seems like it was never there. It is therefore important that virginity is defined as the state of not having engaged in penis-vagina sexual intercourse and not as having an intact hymen (Women On Waves 2017). An additional issue is the fear that using a menstrual cup would indicate that a girl is sexually active or that the cup would encourage sexual activity. Due to the issue of virginity and sexuality, the pharmacies in Kampala that sell the cup will not sell it to anyone under the age of 18 (Semanda 2017; Hytti 2017). However, Hytti (2017) describes that the issue of virginity is generally perceived as a bigger issue on a managerial or governmental level than what it actually is in the field. It is still an issue that needs to be considered and dealt with, but people are not as concerned when they understand how it can help girls and women (Hytti 2017).

The skepticism towards the menstrual cup is also based on the fact that it is a new and foreign product (Weigaard Kjaer 2017; Semanda 2017; Miner 2017; Hytti 2017; Mosuke 2017; Nakalema 2017; Nsereko & Sebukyu 2017). Having a governmental approval or the support of local leaders makes a significant difference when introducing a product in Uganda (Hytti 2017; Nakalema 2017). Further, Hytti (2017) and Weigaard Kjaer (2017) describe that being associated with a known and trusted brand can reduce the skepticism that new products often face. Ugandans are brand conscious and loyal when it comes to choosing menstrual management products (B-Space 2014). Marie Stopes is a well-known brand with health clinics all over Uganda. Recently, Marie Stopes started a project together with WoMena, where retired or simultaneously working mid-wives and nurses sell menstrual cups in peri-urban areas cross-country. The women are provided with a basket of family planning goods, where the menstrual cup is one of them (Hytti 2017). Weigaard Kjaer (2017) and Hytti (2017) describe that the fact that the women are trusted and respected members in their communities, combined with the fact that they are working for a trusted brand, has probably played a large part in the successful start of the sales model.

To ensure a positive uptake, the cup cannot simply be sold but must be coupled with education. The education should include cultural aspects such as the issue of virginity, as well as practical information on how to use the product (Hytti 2017). Further, it is important that the informer has the right information and is able to answer to rumors and questions about the product (Nakalema, 2017). Ideally, education on menstrual hygiene management should be provided to young girls in school to make them aware of their options and create acceptance of the menstrual cup as a menstrual management method (Moskue 2017; Hytti 2017). Further, Nakalema (2017) describes that Ugandans put a lot of trust in their teachers. Unfortunately, few teachers feel comfortable talking about menstruation (Musoke 2017).

It is important that the education does not stop after the decision to start using the menstrual cup has been made. Providing support during the first months of use is of great importance (Semanda 2017; Musoke 2017). Semanda (2017) describes that she almost stopped using the menstrual cup due to the lack of support during her first months of use. Hytti (2017) describes that if support is lacking, there is a risk that the customer will stop using the cup and share the negative experience, which would decrease the acceptability of the cup in the area. It is therefore important to make sure that education and follow-up are conducted, evaluated and documented (Wong 2017).

### **Awareness**

The lack of awareness was the most frequently mentioned challenge during the conducted interviews (Nsereko & Sebukyu 2017; Kyoyagala-Tomusange 2017; Semanda 2017; Weigaard Kjaer 2017; Mosuke 2017; Miner 2017; Were 2017; Nakalema 2017; Hytti 2017). Lawrence Were (18th of April 2017) describes the situation as “The need is there, but the awareness of the product is not.” Mosuke (2017) states that the sales and the awareness of the cup has increased slightly over the past few years, but that the progress is slow. The only people who know about the cup has heard about it from someone they know. Thus, it will take time and a lot of promotion to make the menstrual cup a known product in Uganda (Semanda 2017). If the price was heavily lowered today, Mosuke (2017) is still convinced that there would be a lack of uptake because of the lack of awareness and understanding of the product.

The lack of awareness and understanding of how the menstrual cup works has led to several misconceptions. An example of this is that false rumors claiming that the menstrual cup can cause cancer have appeared (Hytti 2017). Further, some of the interviewees stated that they believe that the menstrual cup can cause girls to lose their virginity since it risks breaking the hymen. Additionally, an interviewee stated that the menstrual cup is hard and inflexible and another believed that it needs to be emptied and cleaned every four hours. The limited access to piped water in Uganda is often brought up as a concern when the cup is introduced and misconceptions are common. Compared to other reusable feminine hygiene product, the menstrual cup requires the least amount of water. It is, however, important to have clean hands during insertion, implying that access to water is required during the period of use (Weigaard Kjaer 2017).

Hytti (2017) argues that not all girls and women see the need for feminine hygiene products. However, it does not imply that it could not significantly improve their living standard (Hytti 2017). The importance of getting the potential customer to see the value of the product was emphasized by several interviewees (Semanda 2017; Miner 2017; Mosuke, 2017; Brennan & Breitbach 2017). Every time WoMena does a donation based project, it is a demand creating activity since it will increase the awareness in the area (Hytti 2017). However, passive word-of-mouth is not a sufficient marketing

method alone (Brennan & Breitbach 2017). Further, the taboo surrounding menstruation makes it a product that few people are willing to talk openly about (Semanda 2017; Musoke 2017). The fact that the majority of all pharmacists are men may create additional barriers to promotion at sales point (Musoke 2017). Thus, extensive marketing is needed to create awareness and a perceived product value (Semanda, 2017; Brennan & Breitbach, 2017). Social media (Semanda 2017; Nakalema 2017; Kyoyagala-Tomusange 2017), TV, radio (Nakalema 2017) and posters (Semanda 2017) could be efficient channels to reach potential customers. Further, musicians could make songs about the product (Musoke 2017). UNFPA generally uses formative research to gain an understanding of what different age groups think about a particular issue or product and how they would like to be approached. For example, when UNFPA marketed the condom in Uganda, they collaborated with radio station's, were present on social media, and got musicians to write songs about condoms (Kyoyagala-Tomusange 2017). Hytti (2017) emphasizes that the Ugandan woman needs to feel that the menstrual cup is marketed to her specifically. For example, when the cup was marketed in Karamoja, the wording had to be adjusted and the picture had to be of a Karamojan woman. To implement a diverse marketing strategy while keeping costs down can be challenging (Hytti 2017). Brennan and Breitbach (2017) argue that to focus on one geography and put a lot of marketing efforts into that area could be cost efficient and enhance word-of-mouth effects.

When segmenting the market, different perceptions of menstruation in different regions, as well as the issue of virginity and sexuality, need to be considered. The Ugandan population can be divided into 19 ethnic groups, with significant cultural differences (Otiso 2006). Further, the price that different segments are able and willing to pay needs to be taken into consideration (Hytti 2017). Semanda (2017) states that\_“There is a mismatch between where the cup is being pushed and where there is interest.”\_She would like to target environmentally conscious women from 20 to menopause, belonging to the middle or upper class (Semanda 2017). Further, Musoke (2017) stated that traveled women, as well as women attending female gyms, have been more open to the idea of the menstrual cup than the average Ugandan woman. Semanda (2017) confirms this as she came across the menstrual cup through her yoga instructor. Among the interviewees, the opinion on which segments to target varies. Semanda (2017) and Musoke (2017) believe that women over 20 should be targeted, whereas Miner (2017) suggests that young girls could be a more efficient entry point. Further, Nakalema (2017) believes that all menstruating girls and women should be targeted since they influence each other. Concerning the geographical segmentation, several of the interviewees suggested that Kampala would be a good location to start in (Nakalema 2017; Semanda 2017; Musoke 2017). Shamirah Nakalema (16th of March 2017) states “It is easier to sell the menstrual cup in Kampala than in rural areas. Almost everything starts in Kampala and then it spreads.”

## 4.3 Availability

### **Current Availability**

Ruby Cups are imported into Uganda both as commercial goods and as donation goods. The donation cups are distributed to Ruby Cup's partners, such as WoMena, who donate the cups to Ugandan girls and women through their projects. The commercial cups are distributed to Ruby Cup's commercial partner Samantha Musoke (Weigaard Kjaer 2017). Musoke sells the menstrual cup through three different distribution channels. The biggest volumes of sales come from NGOs who are doing pilot studies. Further, limited sales come from pharmacies, and from few individuals who contact her directly over Facebook (Musoke 2017).

The menstrual cup is not very available on the Ugandan market today (Semanda 2017; Hytti 2017; Musoke 2017; Miner 2017). Laura Hytti (15th of March 2017) states: “It is becoming increasingly accessible, but you need to know where to go”. In Kampala, the menstrual cup can be found in eight pharmacies, where three of them are in the same area (Hytti 2017). The menstrual cup is not available in any up-country pharmacies, but people who are literate, have internet access and look for it can find it (Musoke 2017). Several attempts to get more pharmacies to stock the product have been done. However, progress has been slow due to pharmacists’ reluctance to taking on the financial risk of holding a valuable product that may not be sold (Semanda 2017; Hytti 2017; Musoke 2017; Miner 2017; Brennan & Breitbach 2017; Nsereko & Sebukyu 2017). Additionally, local pharmacies do not want to buy the product directly from Ruby Cup’s commercial partner Samantha Musoke, but from their supplier pharmacy. For example, there was an expressed demand for the menstrual cup to be available in the local pharmacy in Mbale, Eastern Uganda. However, the local pharmacy would not buy directly from Musoke, but wanted to buy from the big pharmacy in Soroti. Next, the pharmacy in Soroti wanted to buy from the big wholesale pharmacy in Kampala. In every transaction along the chain the product value increases at least 20 percent. So to commercially reach the end customer in remote areas, one would have to convince the whole chain of pharmacies to stock a valuable product with uncertain demand. Due to the financial risk it includes, it is a nearly impossible task (Musoke 2017).

The way that people up country have received the menstrual cup is either through NGO projects or, if they are literate and have internet access, through contacting Samantha Musoke online. However, to receive the menstrual cup would require that the customer can travel to Kampala or knows someone who can travel to Kampala and back, in order to get the menstrual cup from Musoke (Musoke 2017). The menstrual cup is becoming increasingly available, but it requires that people know about it and look for it (Hytti 2017). In order for girls and women to want to buy the cup, it has to be available within a 20-minute commute from where they are (Semanda 2017). This would mean at least 100 locations just within Kampala and that it would have to be available even in the remotest shop (Semanda 2017; Kyoyagala-Tomusange 2017).

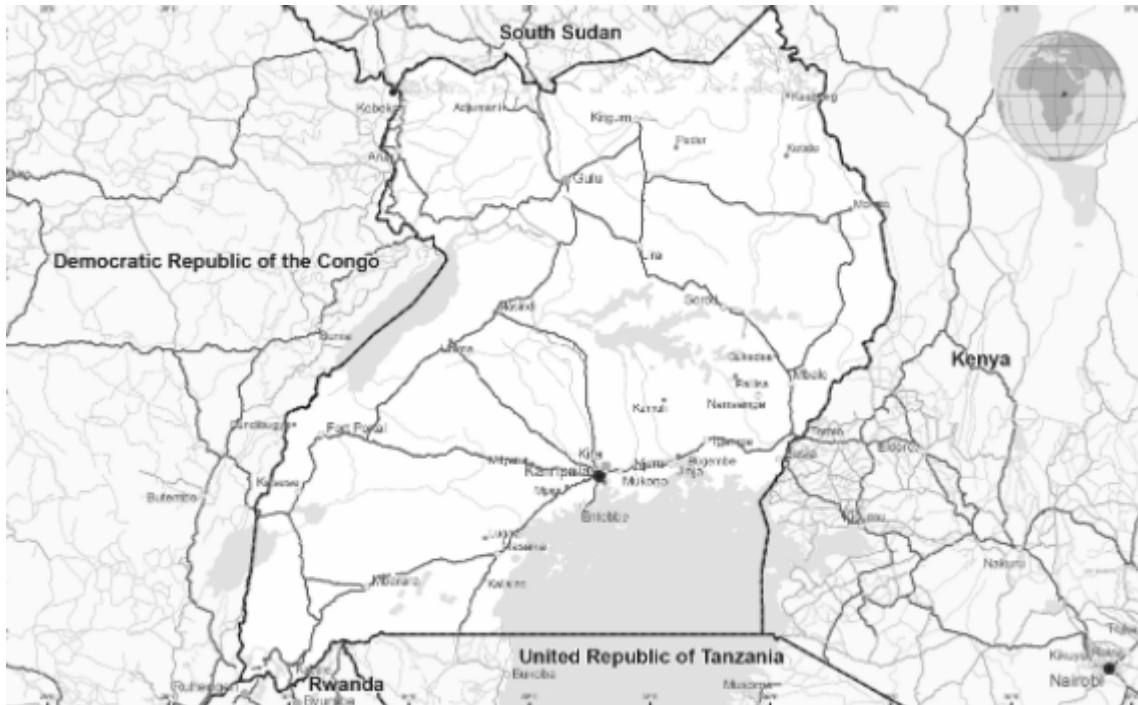
### Infrastructure

There is limited access to internet, alternative payment methods, and drinking water across Uganda. In 2016, 31,1 percent of the population had access to the internet (Internet World Stats 2017). Semanda (2017) states that internet access up-country is more of a challenge. Further, 75 - 85 percent of retail transactions are performed with cash (Bank of Uganda 2017). Regarding water access, the distance to main source of drinking water by residence is presented in the table below.

*Table 11. Distance to the Main Source of Drinking Water by Residence. (Ugandan Bureau of Standards 2016)*

	<b>On Premises (%)</b>	<b>Less than ½ km (%)</b>	<b>½ to 1 km (%)</b>	<b>1 to 3 km (%)</b>	<b>3 to 5 km (%)</b>	<b>5 to 10 km (%)</b>	<b>Total (%)</b>
<b>Urban</b>	54,7	13,7	20,6	9,1	1,3	0,6	100
<b>Rural</b>	19,9	13,5	34,9	24,8	4,8	2,1	100
<b>National</b>	28,4	13,6	31,4	21	4	1,7	100

Uganda is a landlocked country ranked as number 58 out of 180 countries regarding logistics performance (World Bank 2016 (3)). Most railways within Uganda have not been operational for 20 years (Logistics Capacity Assessments 2015 (1)). Road is the only transport option in Uganda since the railway network collapsed (Mohammed 2017; Muathe 2017), and carries over 95 percent of passenger and freight traffic in Uganda. The road network is shown in figure 11 (Logistics Capacity Assessments 2015 (2)).



*Figure 11. Road Network in Uganda. (Logistics Capacity Assessments 2015 (2))*

Kampala is the largest urban center and the only City in Uganda. It accounts for 80% of the country's industrial and commercial activities and generates 65% of the national GDP (Kampala Capital City Authority 2014). It is not too difficult to reach the up-country towns and cities within Uganda as the roads have been improved, but reaching the more rural villages is still challenging due to bad roads (Mohammed 2017). To reach those villages, a smaller pickup truck or motorcycle is normally used. The last bit may have to be accessed by foot or bicycle (Castelijns 2017; Miner 2017). Miner (2017) states that distributing menstrual cups to Buyobo is much more difficult than distributing to the towns. Further, the weather must be acknowledged as many roads are not asphalted and deteriorate with rains (Muathe 2017; Logistics Capacity Assessments 2015 (2)). The equatorial location of Uganda in combination with a high average elevation result in moderate temperatures and ample rainfall throughout the year that vary from north to south. The north is drier with one rainy season that stretches from April to October. The south has more rainfall and two rainy seasons from April to May and from October to November (Otiso 2006).

Due to inadequate infrastructure and rainy seasons, last-mile distribution is especially difficult and done by small tonnage vehicles (Muathe 2017). As it is the most complicated part of the distribution it is also the most expensive one (Castelijns 2017). However, companies manage to distribute products all over Africa. Tim Breitbach (28th of Feb 2017) states: "If someone can successfully distribute

cheap junk in a profitable manner, because it is not given away, then products that actually have a use can be distributed as well". One must consider entrepreneurial solutions. There is a trade off in struggling with the worst roads to reach the most remote areas, or distributing to a semi central place where the customer picks up the product (Brennan & Breitbach 2017). Ruby Cup attempted an entrepreneurial solution by distributing menstrual cups to female micro-entrepreneurs who tried to sell it in their remote areas. However, the sales model was unsuccessful due to the sustainability of the product. Once a customer bought the product, she had lost her customer for ten years (Weigaard Kjaer 2017). Further, since micro-entrepreneurs are not on salary, they quickly use up their local resources of family and friends to whom they can sell (Brennan & Breitbach 2017). Therefore, such a strategy could only work if the women were not solely dependent on that income (Weigaard Kjaer 2017). Another strategy would be to partner with a company that already has a network that reaches the remote villages, especially when only one item is to be distributed. With a partner, the product could be bundled with other products, bringing down the cost and reaching further up country (Castelijns 2017).

### **Service Providers**

There are several reliable and experienced companies in Uganda that can take care of import procedures and distribution of the product (Castelijns 2017). Marjon Castelijns (28th of March 2017) states: "The biggest challenge with setting up agreements with partners is to assess whether or not they are actually capable and willing to push the product. Because a lot of partners will say yes, but then it really depends on whether they really believe in it and actually have the capacity to do it". Ruby Cup has had some experiences with lacking capability when trying to source packaging locally. Companies delivered completely different packaging from what was ordered (Weigaard Kjaer 2017). Further, to find the right person with the willingness to push the product is of particular importance to the distribution of the menstrual cup as it is a taboo subject and needs information and promotion with its distribution (Musoke 2017; Miner 2017). A person might be interested in promoting the product, but it takes time to understand and get used to it so that the product can be promoted in a believable way (Nakalema 2017). A concrete product specification of the menstrual cup needs to be developed so that potential partners have clear guidance on how to promote the product. A specification is under development, but research is slow and costly (Hytti 2017). Further, to make a serious partner, you would have to create a hurdle. By asking potential partners to invest time or money, their willingness and capability can be evaluated. However, to get partners to invest without a guaranteed demand is difficult. The demand has to be created first (Castelijns 2017).

A company can choose to distribute through the public, semi-private or private route. The public route means involving the Ugandan government and Ministry of Health to use their already established official channels for health products, such as national medical stores (Castelijns 2017; Were 2017). The semi-private route implies involving not-for-profit facilities and private facilities, through organizations like Ugandan Health Marketing Group who distribute commodities on behalf of the government (Were 2017). There are several actors in Uganda that distribute through semi-private channels (Castelijns 2017), and there should not be a problem with setting up agreements with such partners (Were 2017). The third route of supply is the commercial sector (Were 2017). Judging by the nature of the menstrual cup, it can be stocked in all kinds of outlets just like the sanitary pads. The most leading outlets for such products are convenience stores. They usually have the liquidity to stock, provided that the demand is there. Further, the retail shops, guest houses and lodges could also be exploited (Nsereko & Sebukyu 2017)



Different opinions on distributing through public or private channels have been collected from the interviews. Some believe the public channel to be an opportunity for the menstrual cup to become more available and gain users (Hytti 2017; Kyoyagala-Tomusange 2017; Wong 2017). However, others believe that private channels can distribute the menstrual cup in a better way than any public channel (Castelijns 2017). Marjon Castelijns (28th of March 2017) states: “It is difficult to get into the public network as there are often many conflicting interests. There may be political or financial incentives to support other products. Moreover, it can take very long to reach the decision takers and convince them of your product. Therefore, I would advise to steer away from any public sector channels as much as possible, as they are not effective on the short term.” Further, there is a tendency to associate low quality to the public system which may delay the adoption of the product (Nsereko & Sebukyu 2017).

## **Regulations**

There are currently no regulations prohibiting the menstrual cup in Uganda (Kyoyagala-Tomusange 2017; Were 2017). However, stamped approvals from the government are lacking (Hytti 2017). Laura Hytti (20th of March 2017) states: “Until we have that level of support for menstrual cups on which it is publically stated that it is supported by government in Uganda, it will be difficult to build that demand”. Getting support from the government has proven to be difficult. Although approved as a medical device in Kenya in 2016, there is still no official approval in Uganda (Hytti 2016).

The National Drug Authority is responsible for quality assurance of pharmaceuticals, medicines, and medical supplies and makes the decision whether the menstrual cup is considered a medical device or not. The first step to getting it approved as a medical device is to present it to the technical groups at the Ministry of Health. The technical group will then advise further on the next step (Were 2017). The menstrual cup has been presented to the Ministry of Health by WoMena, and is supported by the Ministry of Education and Sports and the Ministry of Health (Hytti 2017). However, it has not yet been officially approved as a medical device from the National Drug Authority (Musoke 2017; Kyoyagala-Tomusange 2017; Hytti 2017). The menstrual cup does not necessarily have to be a medical device to be distributed. For example, in Europe, it is considered a commercial product (Hytti 2017). But as a medical device, the menstrual cup could easier be exempted from the value-added tax (VAT) (Castelijns). The VAT is currently making menstrual cups more expensive in relation to other feminine hygiene products, since they are VAT exempted (Musoke 2017).

For products that are not medical and are to be traded, an approval from the National Bureau of Standards is needed (Nsereko & Sebukyu 2017; Were 2017). Both Ruby Cup’s commercial partner Samantha Musoke, and Ruby Cup’s donation partner WoMena, have applied for an approval of the menstrual cup from the National Bureau of Standards. However, they received different explanations as to why it could not be approved. Because the product does not fit neatly into a medical product, or to anybody’s jurisdiction, nobody takes responsibility of approving it. Musoke (2017) states that due to the lack of stamped approval from the government, some pharmacies refuse to stock the menstrual cup.

The VAT and import duties doubles the price of the menstrual cup (Musoke 2017). The VAT in Uganda is 18%. A person who carries out business activities is required to apply to be registered for VAT if the turnover of taxable supplies of the enterprise for three consecutive calendar months exceeds 3500 USD (Uganda Revenue Authority 2013). At the moment, Musoke’s company is too small to be VAT registered. Therefore, she only pays VAT on import, and does not have to add VAT on the sales price. However, the VAT creates a structural problem for market growth (Musoke 2017).

Removing the taxes could have a significant impact on the market for menstrual cups in Uganda (Musoke 2017; Brennan & Breitbach 2017; Nakalema 2017). Although advocating for no taxation on the product could be easier if it was approved as a medical device (Kyoyagala-Tomusange 2017), the approval as a medical device is not necessary. In legislation regarding VAT, feminine hygiene products that are exempted from VAT are listed individually. Samantha Musoke (14th of March 2017) states: “Unless the menstrual cup is on that list specifically in the VAT act, whatever code it is given as a medical device or not, it will still be a subject to VAT”. A request has been sent to the Ministry of Finance and a decision is expected in the next budget which is announced in July (Musoke 2017). Nsereko & Sebukyu (2017) believe that the menstrual cup will be exempted, since it is in line with other exempted products. During budget periods, it is important to continuously follow up with the legislations as government policies keep changing (Muathe 2017).

Opinions on the import process vary. At the moment, Ruby Cup is learning about the import process as they go, and state that the process seems to change every time. It is a time-consuming process, and the last import has taken six months. Due to long import procedures, it is currently impossible for Ruby Cup to say when partners will receive their orders (Weigaard Kjaer 2017). WoMena also expresses not having clarity in what the actual import procedures and import taxes are (Hytti 2017). However, others state the import process in Uganda is well defined and standardized (Mohammed 2017; Castelijns 2017). It could be valuable to consider partnering with reliable Ugandan companies for the import process. It might cost more, but would reduce lead times and simplify planning and forecasting processes for how much is needed and where (Castelijns 2017).

### **Information**

In Uganda, the logistics management information systems are being developed. Information is being shared on a routine basis to know the central level stocks, but there is no information on facility level (Were 2017). Data is not used to make decisions and there are great uncertainties regarding stock levels and number of orders. As a result, forecasting is based on incorrect or incomplete information (Kyoyagala-Tomusange 2017). The general problem for all commodities is forecasting, thus assumptions are necessary (Were 2017).

No forecasting methods are currently being used to predict the demand for menstrual cups in Uganda (Musoke 2017; Weigaard Kjaer 2017; Miner 2017). Ruby Cup has an ongoing communication with their partners who give an approximate number on what they want to order, but the order process is not formalized. Further, there are no formalized processes for measuring and sharing information on potential customers that have shown interest in pharmacies (Hytti 2017; Musoke 2017), and coordination and information sharing between different NGOs and their pilot studies is lacking (Musoke 2017).

## 4.4 Key Challenges and Strategies

The following challenges and strategies were identified during the conducted interviews. The challenges are color-coded based on their importance. The importance was calculated by dividing the number of interviewees that stated the challenge, with the total number of interviewees that were considered to have knowledge within the area. The calculations, including which interviewees that stated the challenge and which interviewees that were considered to have knowledge within each area, can be found in Appendix 8.4.

*Table 12. Key challenges and strategies identified during the semi-structured interviews.*

	<b>Challenges identified</b> <div> <span style="display: inline-block; width: 10px; height: 10px; background-color: #800000; border: 1px solid black;"></span> = Very frequently identified (75 – 100 %)           <span style="display: inline-block; width: 10px; height: 10px; background-color: #C00000; border: 1px solid black;"></span> = Frequently identified (50 – 75 %)           <span style="display: inline-block; width: 10px; height: 10px; background-color: #D3D3D3; border: 1px solid black;"></span> = Sometimes identified (25 – 50 %)           <span style="display: inline-block; width: 10px; height: 10px; background-color: #FFFFFF; border: 1px solid black;"></span> = Rarely identified (0 – 25 %)         </div>	<b>Strategies mentioned to address identified challenges</b>
Affordability	Current price is unaffordable to many	<ul style="list-style-type: none"> <li>• Test new payment models</li> <li>• Guaranteed volumes of sale could lower the sales price</li> <li>• Target different segments at different price points</li> <li>• Remove VAT</li> </ul>
	The product is perceived as expensive in comparison to substitutes	
	Difficult to find the right price point	
	Low and uncertain demand increases costs	
	Customer acquisition is costly	
Acceptability	Skepticism due to new and foreign product	<ul style="list-style-type: none"> <li>• Association with trusted established organization</li> <li>• Provide follow-up support</li> <li>• Education about the issue of virginity</li> <li>• Involve government and community leaders to do advocacy</li> </ul>
	Skepticism due to vaginal insertion	
	Lack of support from government and community leaders	
Awareness	Awareness of the menstrual cup's existence, function and value is currently low	<ul style="list-style-type: none"> <li>• Education about how the menstrual cup works</li> <li>• Promotion and marketing</li> <li>• Selective segmentation</li> </ul>
	Taboo subject hinders word-of-mouth effect	
	Cultural diversity requires customized marketing to different segments	
Infrastructure	Poor infrastructure to reach rural areas	<ul style="list-style-type: none"> <li>• Use micro-entrepreneurs who do not solely depend on the income of the cup</li> <li>• Bundle with other products for last-mile distribution</li> <li>• Partner with organizations with established distribution channels</li> </ul>
	Lack of availability of menstrual cups	
	Lack of appropriate sanitation facilities and access to water	
	Last-mile distribution is expensive and complicated	
	Last-mile distribution with micro-entrepreneurs is challenging due to long product life time	
Service Providers	Reluctance to hold stock	<ul style="list-style-type: none"> <li>• Reduce financial risk</li> <li>• Work together to create product specification</li> <li>• Assess willingness to push product before partnering</li> <li>• Target all outlets, especially convenience stores that have the liquidity to hold stock</li> </ul>
	Product needs information and promotion with its distribution	
	Not all service providers are capable and willing to push the product	
	Conflicting interests due to different political or financial agendas	
Regulations	No stamped approvals from the National Bureau of Standards or the National Drug Authority	<ul style="list-style-type: none"> <li>• Continue to apply for approvals and VAT exemption</li> <li>• Partner to smoothen import process</li> </ul>
	The menstrual cup is assigned value-added tax, which its substitutes are not	
	Uncertainties related to the import process may cause delays	
Information	Information is lacking and no forecasting techniques are used	<ul style="list-style-type: none"> <li>• Collect information about customer preferences</li> <li>• Partner to smoothen import process and simplify planning and forecasting activities</li> </ul>
	Information sharing between different actors is lacking	

## 5. Analysis

On the basis of the three themes that have guided the structure of the literature review and the empirical findings, the analysis has been constructed. To address the research questions in an organized manner, the analysis has been divided into two sections. First, the three themes are analyzed to obtain an understanding of the current situation for menstrual cups in Uganda. Second, a way forward is proposed by analyzing how to prioritize and address the identified challenges.

### 5.1 Current Situation

The current situation is analyzed by first looking at the factors affecting likelihood of adoption, followed by an application of the Innovation Diffusion Theory. Lastly, key challenges mentioned in the literature review and case study are compared and the differences are analyzed.

#### Likelihood of Adoption

To obtain an understanding for the likelihood of the menstrual cup being adopted by Ugandan girls and women, the empirical findings of fulfilment and importance of Mohr et al.'s (2014) six factors are analyzed. To lay a foundation for proposing a way forward, the current fulfilment and importance are extended with a third dimension: Potential impact. A factor that achieved a low level of fulfilment, must not necessarily be the factor that can be improved the most. Following the same reasoning, a factor that is rated as important, should not by default be the focus since it may not be possible to improve. Therefore, the possibility to improve each factor is evaluated. By analyzing the strategies mentioned by the interviewees in the case study, and connecting them to the identified challenges they would address and factor they would affect, the potential impact could be calculated. The calculations can be found in Appendix 8.5, and the three dimensions are visualized in figure 12.

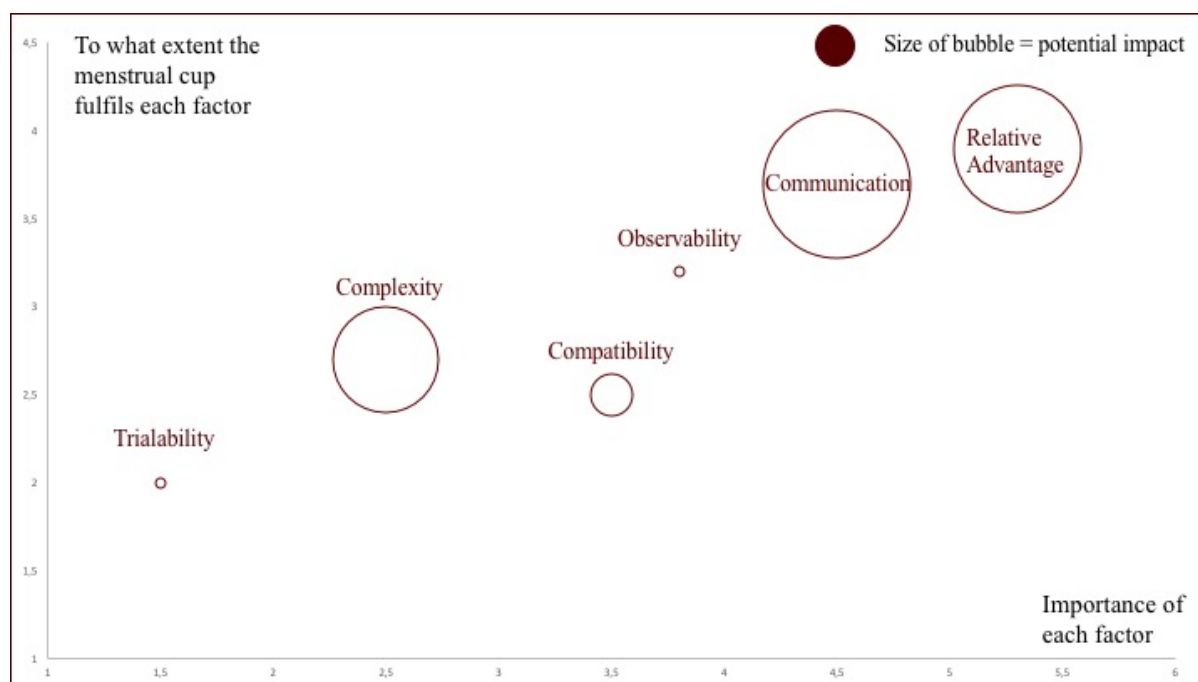


Figure 12. The current fulfilment, importance, and potential impact on the six factors affecting Ugandan girls' and women's likelihood of adopting the menstrual cup. (Hagander & Velin 2017)

No strategies mentioned in the case study addressed the trialability and observability of the menstrual cup in Uganda. Therefore, their potential impact illustrated in the figure are minimal. Their low potential impact can be explained by the two factors being closely linked to the nature of the product. As confirmed by Miner (2017), the menstrual cup cannot be tested before purchase. Further, the product benefits of the menstrual cup are difficult to make more observable due to vaginal insertion. Increasing the trialability and observability would therefore require rethinking the features and design of the menstrual cup, mentioned as a strategy by Eyring et al. (2011) and Michelini (2012) in the literature review. However, further research must be done in order to determine if the concept of rethinking product design could be applicable on the menstrual cup and how it could affect its likelihood of adoption.

The remaining four factors are all considered possible to improve to some extent. Communication and relative advantage were analyzed to have the biggest potential impact out of the six factors. They have also been considered the most important factors, providing optimism for the future for menstrual cups in Uganda. The largest potential impact of communication can be explained by the awareness of the menstrual cup's function and value being identified as the most important challenge to address. All interviewees considered able to identify that challenge, identified the challenge in the case study. Further, Kasturi Rangan et al. (2011), Michelini (2012), and Simanis & Duke (2014), all confirmed the reluctance to adopt due to the extreme novelty customer often experience in developing contexts. Many interviewees mentioned possible strategies on how the challenges could be overcome. Six interviewees confirmed that it could be improved with promotion and marketing. Further three interviewees expressed that communication could be improved if associated with trusted established organization or if influential leaders were involved in doing advocacy. Selective segmentation was also a strategy mentioned by three interviewees that could improve the communication of product benefits. Moore (1998) confirms the strategy of selective targeting by arguing that word-of-mouth effects are enhanced when targeting fewer and smaller segments.

The large potential impact of relative advantage is analyzed to be mainly due to strategies aiming to reduce the high initial price of the menstrual cup. As mentioned by Eyring et al. (2011) and Michelini (2012), as well as being identified as one of the most important challenges in the case study, the customer's ability to pay proposes a major challenge. Sánchez & Ricart (2010) proposes that including local actors and using an interactive business model, could increase customers' willingness to pay. Further, several strategies were identified in the case study to reduce the perceived expense in comparison to substitutes. Three interviewees identified one strategy to be by implementing a partial payment model. Further, Semanda (2017) and Were (2017) mentioned that identifying organizations willing to take the financial risk and guarantee a sales volume could lower the price. Additionally, Musoke (2017) and Kyoyagala-Tomusangewere (2017) argued that a removal of the value-added tax would reduce the price of the menstrual cup.

The potential impact on complexity of the menstrual cup is analyzed to be almost as big as the relative advantage. Although closely related to the nature of the product, the complexity can be reduced by enforcing follow-up support as mentioned by Semanda (2017) and Hytti (2017). Further, five interviewees argued that education on the menstrual cup's functions is needed. As mentioned by Sánchez & Ricart (2010) in the literature review, one challenge to create demand is the lack of product understanding, implying that the challenge could be overcome if the understanding of the product was improved.

Only one strategy was analyzed to address the current compatibility of the menstrual cup, which was to educate Ugandan girls and women about virginity. Informing that virginity is not equal to breaking the hymen was mentioned as a strategy by both Hytti (2017) and Nakalema (2017). Further, Hytti (2017) stated that the barrier of vaginal insertion can in some cases be overcome with information. However, the compatibility of the menstrual cup is difficult to noticeably improve. In the literature review, Michelini (2012), and Simanis & Duke (2014), both mentioned the need for behavioral change to be a key challenge in creating demand in a developing context.

### **Applying the Innovation Diffusion Theory**

To obtain an understanding of the current level of adoption, the Innovation Diffusion Theory is applied. According to Rogers' (2003) model, innovators represent 2,5% of potential customers, early adopters represent 13,5 percent, early majority represent 34 percent, late majority represent 34 percent, and laggards represent 16 percent. However, according to Mohr et al. (2014) individuals may fall into different categories depending on the product, affecting the percentage each category represents. To define the categories of adopters for the menstrual cup in Uganda, the innovation diffusion theory was combined with descriptions of current and potential adopters of the menstrual cup in Uganda, and their willingness or reluctance to adopt the product.

#### *Innovators*

As stated by Smith & Findeis (2013), innovators tend to be well educated, financially well off and involved in several social networks. Further, as Dodgson et al. (2008) described, innovators are characterized by their willingness to act in high levels of uncertainty, as well as by their willingness to actively seek new innovations. In the case study, Semanda (2017) described that environmentally conscious women belonging to the middle or upper class would be a suitable initial target for the menstrual cup in Uganda. Further, Musoke (2017) described that traveled women have been more open to the idea of the menstrual cup than the average Ugandan woman. Following the reasoning above, innovators are defined as well educated, financially well off and traveled women who are environmentally conscious and conscious of what they put inside their bodies. Further, as skepticism towards a new and foreign product that is inserted into the vagina was emphasized by several interviewees in the case study, we have defined innovators to be willing to question norms of society and be willing to try new products although associated with a taboo subject and vaginal insertion.

#### *Early Adopters*

As Smith & Findeis (2013) described, the early adopters tend to be well educated, socially forward and be almost as financially well off as the innovators. However, as Smith & Findeis (2013) and Dodgson (2008) argued, the early adopters are considered to be integrated into their local communities to a higher extent when compared to the innovators, and are often highly esteemed members within that community. Since the early adopters are shaped by society to a larger extent, we have defined the early adopters as less willing to go against the norms of society. Further, following the reasoning above, we have defined the early adopters as likely to be less traveled, more integrated into their local community, and slightly more price sensitive compared to the innovators.

#### *Early Majority*

As stated by Dodgson et al. (2008), the early majority have the willingness to adopt, but will avoid being the first to do so due to their reluctance to take on risk. They are looking for reliable and proven products and are therefore in need of confirmation from opinion leaders before adopting. Therefore, we have defined the early majority as girls and women who do not want to be the first to adopt the

menstrual cup due to reluctance to go against cultural norms connected to a taboo subject. However, by interacting with opinion leaders such as community pharmacist Angela Semanda, or the trendsetter in their group of friends, they may be willing to adopt the product. Smith & Findeis (2013) argue that the early majority generally have a better financial situation than the late majority and laggards. However, due to the poor living standard identified in the case study, and the fact that seven interviewees confirmed the menstrual cup to be unaffordable to the majority of the Ugandan population, we have defined the early majority as a significantly more price sensitive segment than the early adopters and innovators.

#### *Late Majority*

As Dodgson et al. (2008) described, the late majority have limited financial means and are reluctant to take risks. The case study showed that the average income per household and month in Uganda is 84 USD. As the late majority is considered to be more restricted by their financial situation compared to the previous mentioned categories of adopters, we have defined them to have similar characteristics regarding risks and reluctance to go against cultural norms as the early majority, but as a segment that is limited by their financial resources to a higher extent. Further, Smith & Findeis (2013) identified lack of education to be prohibiting adoption among the late majority. As seen in the case study, 56 percent of Ugandan youth in the ages 15-24 do not have a completed primary education. Therefore, the late majority is further defined as a segment with limited education.

#### *Laggards*

As Dodgson et al. (2008) stated, laggards often lack the knowledge, skills, and resources necessary to adopt new products and may wait until they are forced by regulators to adopt. As the menstrual cup requires vaginal insertion it is, as Hytti (2017) stated, important to educate girls and women to increase acceptance and get more girls and women to adopt the product. However, it is of great importance that no one feels that the product is forced on them. The product needs to be adopted voluntarily. The laggards are defined as the girls and women who will never adopt the menstrual cup due to extensive cultural barriers and will therefore not be targeted in this study.

Based on the definitions of the five segments of adopters for the menstrual cup in Uganda, in combination with Uganda's poor average living standard and cultural diversity identified in the case study, it can be concluded that the traditional distribution of adopters according to Roger (2003) should be adjusted when applied to the Ugandan context and the menstrual cup. As could be seen in the case study, four of the six most frequently identified challenges were connected to the high price and skepticism. Further, the lack of access to water described by the Ugandan Bureau of Standards (2016) was confirmed to be a challenge by four interviewees. Thus, the late majority and laggards, characterized as price sensitive, skeptics, and strongly risk averse, will make out a larger portion of the adopters than suggested by Rogers (2003). Following the same argument, combined with the low level of secondary and tertiary education in Uganda, the segments of innovators and early adopters will make out a smaller portion of adopters. Lastly, as five interviewees confirmed that the menstrual cup is perceived as expensive compared to its substitutes, the financially limited and risk averse early majority should make out a slightly smaller portion as well. An illustration of the adjusted model can be seen in figure 13. It is important to acknowledge that the figure aims to create a visualization of the approximate distribution of the categories of adopters for the menstrual cup in Uganda. It is based on the argumentation presented above and has not been based on any quantitative data. Thus, it can only be used to gain an approximate idea of the distribution of the categories of adopters and not as an

exact segmentation of the Ugandan market for menstrual cups on which quantitative assumptions can be made.

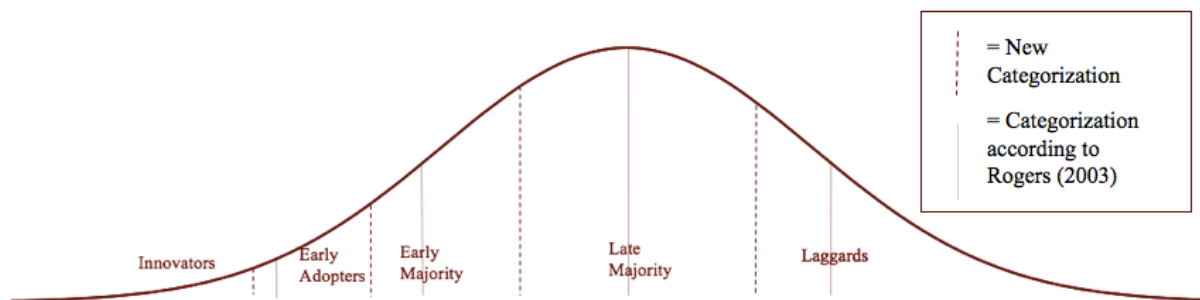


Figure 13. Adjusted categorization of adopters for the menstrual cup in Uganda. (Rogers 2003, edited by Hagander & Velin 2017)

The product has already started to diffuse among some innovators. In the case study, Musoke (2017) confirmed being contacted by individuals over Facebook who are reaching out to try the product. These individuals have somehow heard about the product and are willing to try it regardless of the nature of the product, its perceived high cost and lacking availability. Further, the product has started to spread slightly among early adopters, such as pharmacist Angela Semanda. As a community pharmacist, she is trusted within her community and has the ability to influence others. Hytti (2017) and Weigaard Kjaer (2017) state that girls and women categorized as early majority have begun to adopt the menstrual cup through subsidized sales by organizations such as Marie Stopes. Further, a few girls and women belonging to the late majority have adopted the menstrual cup through donation programs. There has been no observed adoption among laggards.

### Key Challenges to Create Demand and Availability

Most of the challenges to create demand and availability in a developing context mentioned in the literature review were mentioned to be challenges for the menstrual cup in Uganda as well. Especially challenges such as customer's limited ability to pay, lack of product understanding, skepticism to new and foreign products, regulations, and lack of data were emphasized in both the literature review and the case study. However, some differences were identified when comparing the two. The key challenges to create demand and availability identified in the literature review and case study are summarized in the table below.



Table 13. Key identified challenges to create demand and availability according to the literature review and case study.

	Key Challenges	Identified in the Literature Review	Identified in the Case Study
Demand	Uncertainties in demand	X	X
	Customer's ability to pay	X	X
	Acquisition of new customer is costly	X	X
	High operational expenses	X	X
	Skepticism due to new and foreign product	X	X
	Lack of product understanding	X	X
	Lack of awareness of product's existence	Not mentioned	X
	Support from government	Not mentioned	X
	Need for behavioral change	X	X
	Skepticism due to vaginal product	Not mentioned	X
	Segmenting and targeting	X	X
Availability	Unreliable and poor access to infrastructure	X	X
	Lack of availability	Not mentioned	X
	Lack of formal distribution channels	X	Not mentioned
	Limited ability to carry stock	X	X
	Last-mile distribution	X	X
	Setting up, enforcing, and ending agreements	X	X
	Misaligned incentives	X	X
	Changing regulations and government policies	X	X
	Corruption	X	Not mentioned
	Lack of data	X	X
	Poor information sharing	X	X

The challenge of limited affordability identified in the literature review was confirmed by seven interviewees to be one of the main challenges in the case study as well. Further, another large challenge, identified in both the literature review and the case study, was the skepticism new products face in when introduced in a developing context. Simanis & Duke (2014) and Michelini (2012) motivated the skepticism with the fact that people with limited means experience extreme novelty when introduced to new products, combined with a reluctance to change routines and mindsets. In the case study, the challenge of skepticism of a new and foreign product was strongly confirmed as it was mentioned by seven interviewees. Further, five interviewees mentioned additional skepticism due to the menstrual cup being inserted into the vagina. Skepticism due to vaginal insertion was however not mentioned in literature, due to the product specific nature of the challenge. Additionally, the challenges regarding lack of awareness for the product's existence and lack of availability of the product are connected to the case study specifically. Therefore, although being two of the most frequently identified challenges in the case, they were not identified as general challenges in the literature review.

The lack of governmental support was mentioned by five of the interviewees, and was identified as a main challenge in the case study. The fact that the population puts great trust in the government and local leaders, and that gaining their approval therefore should be considered a prioritized challenge, was not mentioned in the literature review. One reason could be that the challenge of governmental approval is of specific importance to address in Uganda. Further, the emphasis on governmental

approval and support found in the case study is likely to be linked to the products limited compatibility to the Ugandan culture.

The challenge of fragmented or non-existing distribution channel mentioned by Karamchandani et al. (2011) was not identified to be a challenge in the case study. Castelijns (2017), who has significant experience within logistics and distribution networks in Uganda, dismissed such a challenge. Three interviewees confirmed the function of private and semi-private distribution channels across Uganda. Further, two interviewees from the public sector, confirmed the function of public distribution channels across Uganda. The challenge to address should therefore not be non-existent distribution channels, but rather choosing the appropriate one.

Regarding corruption, no interviewees referred to it being a current challenge for the menstrual cup in Uganda. However, Castelijns (2017) referred to having observed corruption in other situations. Further, several authors in the literature review, such as Parmigiani & Rivera-Santos (2015), Afridi & Ventelou (2013), and Koch et al. (2009), stated that firms may worry about corruption and bribery in developing contexts. As the market for menstrual cups is still in an early stage, and nine interviewees confirm Ugandans being unaware of the product's existence and value, corruption may not be visible yet. Therefore, even if the case study did not prove corruption to be a key challenge today, it should be kept in mind for future partnerships and choice of distribution channels.

## 5.2 Proposing a way forward

Proposing a way forward requires that the identified challenges are addressed in a coordinated way. Therefore, the second section of the analysis aims to propose a way forward by prioritizing and addressing challenges according to reaching the innovators, early adopters, early majority, late majority and laggards. A three-step framework will summarize the suggested approach for prioritizing and addressing the challenges to mainstream menstrual cups in Uganda.

### **Reaching the innovators**

As stated by Nakalema (2017), Kampala is generally from where products are adopted and spread nationwide. Therefore, based on the characteristics of innovators, the majority of Uganda's innovators for the menstrual cup are assumed to be located in Kampala. Further, Kampala provides better access to drinking water, as well as higher average income and population density compared to the rest of Uganda. Therefore, Kampala should be the primary location of focus to reach the innovators.

The product is currently available in eight pharmacies in Kampala, which is Uganda's only city. Musoke (2017) stated that people who are literate, have internet access and look for it can find it. As Semanda (2017) confirmed internet access to be less of a challenge in Kampala, and innovators are characterized as educated, an innovator interested in trying the cup is assumed to be able to find one in one of the current locations. Therefore, the issue of low availability is less urgent to address when reaching the innovators. Further, as confirmed by three interviewees, the menstrual cup is affordable to the upper-end, making the current unsubsidized price of 16,5-22 USD affordable to the financially well of innovators. Based on the characteristics of the innovator, the lack of stamped approvals from governmental bodies, and the issue of virginity or sanitation, are not considered to be decisive purchasing factors. Therefore, these challenges are also disregarded as primary issues for reaching the innovator segment. However, to diffuse further among innovators, they must learn about the product's existence and be convinced of its value. Lack of awareness of the menstrual cup's existence, functions

and value was stated as the largest challenge in the case study, confirmed by nine interviews. The first priority, is therefore to address the challenge of awareness of the product's function and value to innovators in Kampala.

Musoke (2017) stated that women's gyms have been a good entry point to raise awareness. Further, Semanda (2017) confirmed that a training center could be a good entry point since she learnt about the menstrual cup through her yoga instructor. Further, Semanda (2017) suggested that women who are environmentally conscious could be more open to the menstrual cup due to its reusability. Therefore, to increase product awareness among innovators, informatory events in collaboration with an environmental fair, a women's gym, and yoga classes should be held. Further, it would increase the chance of successful product adoption since information on how the product should be used, as well as where support and information can be accessed online, would be provided. Because of the complex nature of the product and the currently limited availability, targeting small and specific segments through personal marketing may raise curiosity and enhance word-of-mouth effects within those communities. The strategy could be especially successful for innovators as they are more likely to talk about a taboo subject such as menstruation. Due to the issue of virginity, confirmed by five interviewees, women over 18 should be the main target for the informatory events.

The prioritized challenges to reach the innovators and how to address them are summarized in the figure below.

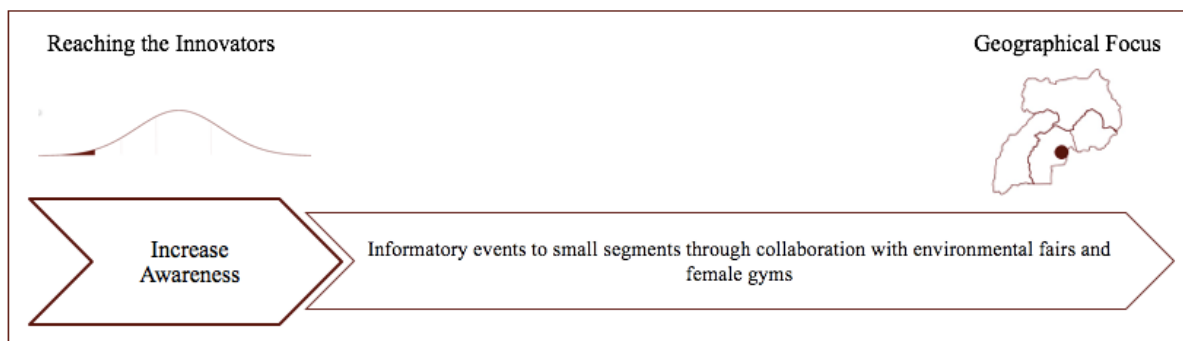


Figure 14. Prioritized challenges to reach the innovators and how to address them. (Hagander & Velin 2017)

### Reaching the Early Adopters

Since early adopters tend to be more integrated in their communities than innovators, they are assumed to be more dispersed over Uganda. However, due to the fact that demand for new products tend to start in Kampala and spread from there, early adopters located in Kampala are recommended to be the initial target. Further, by focusing mainly on Kampala, efforts to reach the early adopters can be combined with existing efforts to reach the innovators. Early adopters are considered less likely than innovators to find the menstrual cup in one of the eight pharmacies in Kampala, or to contact Samantha Musoke over Facebook, which makes availability a pressing challenge to address when reaching the early adopters. By limiting the focus to Kampala, availability can be more efficiently increased. As stated by Musoke (2017), to commercially reach beyond Kampala, whole chains of outlets must be convinced to stock the product. Therefore, the fact that outlets are reluctant to stock the menstrual cup, confirmed by six interviewees in the case study, provides further argument for initially targeting the early adopters located in Kampala.

As stated by Semanda (2017), the product should be available within a 20-minute commute in Kampala, requiring at least another 92 outlets within Kampala to stock the product. To achieve such a spread, outlets other than pharmacies should not be neglected. Although pharmacies are a good way to reach early adopters as they are trusted in handling health products, which was a strategy pressed by three interviewees in the case study, widening the scope to include other outlets such as convenience stores may drastically increase its availability. Nsereko & Sebukyu (2017) confirmed that all outlets could be potential sales points for the menstrual cup. However, to increase availability to more outlets in Kampala, regulatory challenges must first be addressed. The menstrual cup currently lacks official approvals from government authorities, confirmed to be a challenge by four interviewees in the case study. Musoke (2017) described that the latest applications for approvals have been declined due to various explanations. The different explanations insinuate a lack of awareness among regulatory decision-makers as to what the menstrual cup is and in whose jurisdiction it lies to approve it, which was confirmed to be a challenge by five interviewees in the case study. Continuous and coordinated efforts must therefore be made to apply for an approval, together with information as to why it should be approved. An understanding of how the menstrual cup was approved as a medical device in Kenya may improve the chances of receiving an approval in Uganda.

The financial risk for outlets, as well as the expensive one time cost for potential customers, must also be reduced for the product to reach beyond the financially well off and risk taking innovators. Therefore, to reach the early adopters, the menstrual cup must be exempted from VAT like its substitutes currently are. As Musoke (2017) stated, a VAT exemption would not only lead to a cost reduction of 18 percent to the company importing menstrual cups into Uganda, but also reduce the sales price by 18 percent if the seller is large enough to be a subject to VAT. Thus, a VAT exemption would lead to a lower financial risk for those stocking the product and make the menstrual cup increasingly affordable. As these challenges were identified to be among the top four most important challenges in the case study, a VAT exemption could drastically increase the likelihood of early adopters adopting the menstrual cup. The menstrual cup can be exempted from VAT regardless if it is considered a medical device or not, and will hopefully be exempted when the next budget is presented by the government in July. Nsereko & Sebukyo (2017) argue that the menstrual cup should be exempted since the menstrual cup is in line with other feminine hygiene products that are currently exempted. However, if that is not the case, the application must be followed up immediately and a new request must be sent in.

Whereas increased availability, affordability, and official approvals would likely increase the diffusion rate among early adopters, an increased awareness and acceptability of the menstrual cup as a menstrual management method is critical. Early adopters are more shaped by society's norms and standards than innovators, causing skepticism to be enhanced in this segment. The cause for skepticism most mentioned as a challenge in the case study, was the skepticism towards a new and foreign product. Therefore, it is important that follow-up support is available during the first periods with the menstrual cup. Thus, sales clerks must be trained to provide support or information about where support can be accessed. Further, Simanis & Duke (2014) suggests that consumer groups can be used to handle cultural issues and peer pressure. Through consumer groups, false rumors could be dismissed and it would give current users an opportunity to invite female family members and friends to learn more.

Michellini (2012) argues that informative campaigns can be used to increase product awareness. Therefore, as Semanda (2017) suggested, posters should be set up in pharmacies where the menstrual cup is currently being sold. Whereas this may not lead to many direct sales, due to the price of the

product, it may spark curiosity which could eventually lead to a purchase. Further, informative posters could be particularly valuable since the majority of all pharmacists are men, which may decrease the chances of them introducing the product to girls and women in the store.

Semanda (2017) and Hytti (2017) pressed the need for selective segmentation. Both the literature review and the case study pressed that uneducated girls and women will find it more difficult to change their behavior and adopt new products. Therefore, women studying in University is suggested as an appropriate initial target group to reach the early adopters. Female university students represent a well-educated segment, which is more likely to be open-minded, influential and financially well off than the un-educated Ugandan woman. Although the Education Policy and Data Center (2014) shows that only four percent of Ugandans aged 15-24 continue with higher education, the majority of all institutions for higher education are located in the Central Region near Kampala. Further, reaching early adopters in these campuses could be a valuable segment of early adopters as they may have contacts and families from all over Uganda, enabling a potential spread to the more dispersed early adopters as well.

To find other segments to target, pharmacies and other actors selling menstrual cups must improve the way they collect and share information. Lack of information and information sharing was confirmed by five interviewees to be a challenge in the case study. As suggested by Jahre et al. (2012), information should be collected electronically if possible to reduce human errors. By creating an electronic database for collecting sales and customer information, information could be efficiently shared and updated. Further, by starting to collect such information at an early stage, forecasts of demand could slowly start to develop.

The prioritized challenges to reach the early adopters and how to address them are summarized in the figure below.

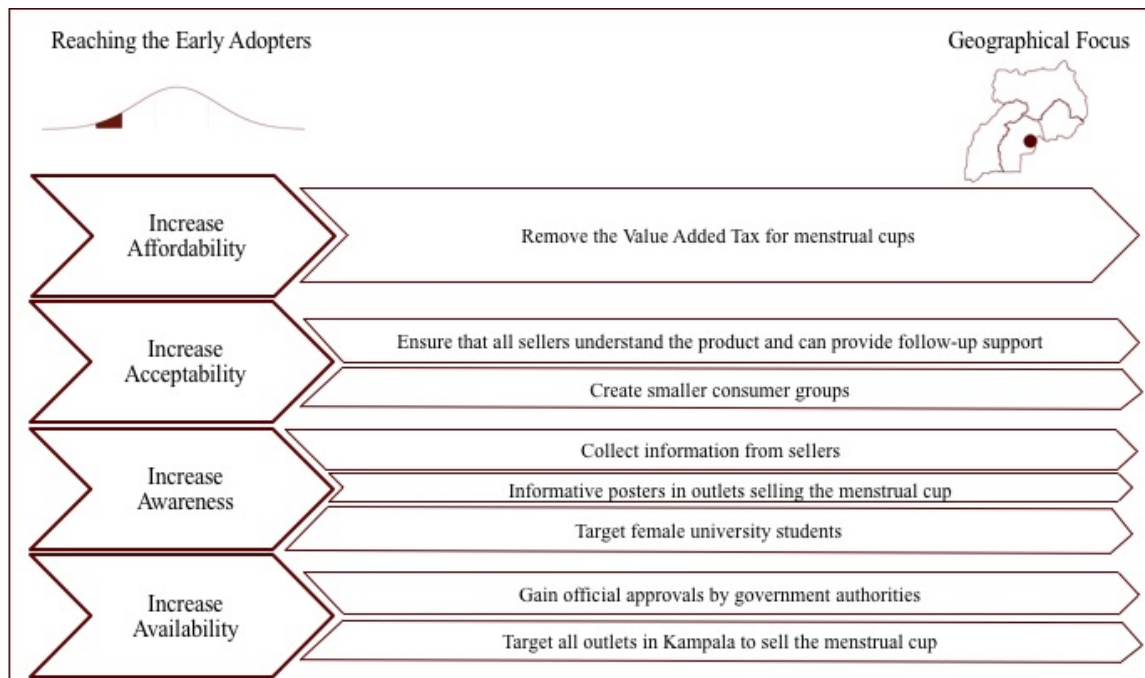


Figure 15. Prioritized challenges to reach the early adopters and how to address them. (Hagander & Velin 2017)

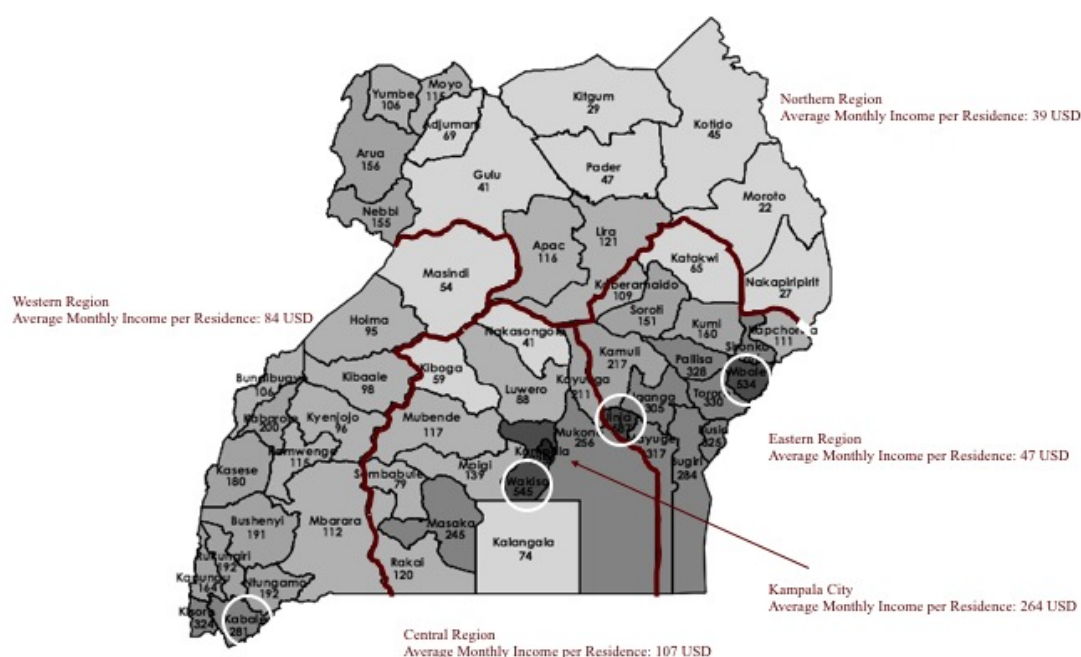
### **Reaching the Early Majority**

For the menstrual cup to diffuse among the early majority of girls and women in Uganda, further challenges than those involved with reaching the innovators and early adopters must be addressed. As confirmed by the Ministry of Health (2008), the majority of Ugandans live in rural areas. Therefore, a focus on Kampala alone is not sufficient in order to reach the early majority of adopters of the menstrual cup. Instead, the geographical scope must be widened. However, based on average monthly income together with population density, the geographical scope of the early majority can be somewhat restricted. Due to the overall low income and population density, combined with the poorest access to water, the Northern Region can be excluded when striving to reach the early majority. The income level of the Eastern region is quite similar to the income level of the Northern region, but due to its overall high population density in comparison to other areas in Uganda, its urban areas should be included when targeting the early majority. Thus, when targeting the early majority, the geographical focus should be on the Central, Western, and Eastern regions.

Creating demand for the menstrual cup among the early majority involves overcoming the challenges of a currently unaffordable price. Even if the menstrual cup would be exempted from VAT, which would reduce the price to approximately 16 USD, the early majority could still not afford it. Especially in the populated Eastern region, the purchase price would constitute almost 40% of their average monthly income. As mentioned by Gunther (2014) and Pitta et al. (2008), flexibility in payments may be required due to the customer's limited ability to pay in developing contexts. Further, Semanda (2017) confirmed that partial payments may be a way to increase affordability and perceived value in comparison to substitutes. In addition to the increased affordability that a partial payment model implies, it has the potential to encourage data collection, emphasized as a challenge by four interviewees. A partial payment model would create more incentives for the seller to collect information about the customer in order to keep track of the payments. Moreover, the partial payment model would provide an opportunity to increase the chance of a positive uptake as continuous contact with trained sellers would enable follow-up support during the first months of use. However, implementing a partial payment model would initially require a volume guarantee from a larger organization. As Semanda (2017) confirms, she would not agree to take on the financial risk of partial payments if she had to carry the financial risk. Therefore, to implement a partial payment model, organizations willing to take the financial risk must be identified.

To decide on a suitable payment model, Eyring et al. (2011) suggested to first identify the price the segment is willing to pay, and then strive to achieve that price. Hytti (2017) stated that finding the right price point has been proven to be difficult. A high price hinders demand due to the generally low ability to pay for Ugandan girls and women. However, a low price may have a negative impact on the perceived quality of the product. Due to the majority of menstruating girls and women using disposable pads, followed by three percent using reusable pads, a price point between the two is considered appropriate. By setting a higher monthly price than the price for Always disposable pads, the quality of the product can be communicated. And by setting a lower monthly price than the price for reusable pads, the financial saving of choosing the menstrual cup before reusable pads can be communicated. Following this reasoning, the price point of partial payments should be between 1 - 3,32 USD. In order to minimize the number of partial payments, and thereby the financial risk for the seller and the effort of physical financial transactions, monthly payments of 3,2 USD for a period of five months is suggested. As mentioned in the literature review and case study, different pricing

strategies may be necessary when targeting different segments. However, different prices should only be implemented if the segments are geographically separated. Due to the geographical spread of average income in Uganda, smaller partial payments with longer payback time for the early majority in the Eastern region should be considered.



Last-mile distribution through micro-entrepreneurs should also be re-investigated once a demand has been observed. Using micro-entrepreneurs was mentioned to be a valuable method of last-mile distribution in the literature review. As Weigaard Kjaer (2017) mentioned, Ruby Cup attempted to use

micro-entrepreneurs during a pilot project in 2012 when the menstrual cup was completely unknown. However, the distribution strategy failed due to the micro-entrepreneurs depending solely on that income. Marie Stopes, on the other hand, have recently started using micro-entrepreneurs who are either retired or have an alternative source of income. Hytti (2017) refers to their sales model as successful. Therefore, once the menstrual cup gains visible demand among innovators and early adopters, and chosen micro-entrepreneurs have other sources of income as well, the strategy may be more successful. It should therefore be reinvestigated as a last-mile distribution strategy to reach the early majority.

To successfully distribute menstrual cups to locations outside of Kampala, a choice of distribution channel must be made. In the case study, interviewees argued for both the public and private channel being the appropriate choice for distributing the menstrual cup. Important to take into consideration is that the interviewees promoting the use of private channels are working in the private sector of distribution, whereas those promoting the public channel are working in the public sector, which could influence their responses. Regardless, as stated by Castelijns (2017), building a commercial distribution network alone to create availability to the early majority does propose many challenges. As Musoke (2017) mentioned, it would require not only one outlet to take on stock of menstrual cups, but whole chains of outlets. Even if official approvals and VAT exemption would be in place, the issue of profitability would initially be challenging due to the uncertainty in demand. The commercial route is therefore not believed to be the best option when initiating the process of reaching the early majority, but should be reconsidered once demand is established.

The public channel is not believed to be the best option when initiating the process of reaching the early majority either. Whereas the association with government officials may reduce the skepticism surrounding the menstrual cup, choosing the public channel poses several risks. Three interviewees confirmed the need for promotion and information with the distribution of the menstrual cup to be a challenge. Due to the current skepticism among decision-makers, emphasized by five interviewees in the case study, choosing the public channel could involve a risk of lacking incentives to promote the menstrual cup. Further, as Nsereko & Sebukyu (2017) stated that the public channel sometimes is associated with distributing low-quality products, the public channel may negatively affect the uptake of the menstrual cup.

Conclusively, the semi-private channel should be investigated when initiating the process of reaching the early majority. The semi-private channel is both separated from public channel agendas and misconceptions, as well as not being driven by profitability like the commercial channel. Further, actors within the semi-private channel are driven by social purposes, implying that if they believe in a product they will help to push for it. Therefore, such a non-profit partner with established distribution channels, that believes in the menstrual cup, should be identified. To increase the chances of finding a suitable partner, and to ensure that the product will be pushed in the correct way, a product specification should be developed. Further, choosing to partner can also help reduce the uncertainties in import processes. Both Hytti (2017) and Weigaard Kjaer (2017) stated that they are not clear on what the standard import procedures are. However, Castelijns (2017) and Mohammed (2017), who have logistic experience in Uganda, stated that the import process is straightforward. Therefore, a partner with experience in Ugandan distribution can help to ensure smooth import procedures. By reducing the currently large uncertainties regarding when menstrual cups will arrive, Castelijns (2017) argued that planning and forecasting could be improved.



As the early majority are reluctant to take risks and are looking for proven and reliable products, the challenge of skepticism to a vaginal product, mentioned by five interviewees in the case study, is enhanced in this segment. Three interviewees argued that one strategy to gain product acceptability is to involve community leaders and government to do advocacy for the menstrual cup. However, five interviewees confirmed lack of support from government and community leaders to be a challenging. As Hytti (2017) stated, issues such as sanitation and virginity are often perceived as larger issue on a managerial level than out in the field. Further, misconceptions about the issue of sanitation, and more importantly, a misconception that the menstrual cup can cause girls and women to lose their virginity, appeared among interviewees during the case study. The fact that there are decision-makers working with reproductive health that define an intact hymen as virginity, poses a serious threat to the acceptability of the menstrual cup in Uganda. Therefore, information and education, aiming to increase the acceptability of the menstrual cup, should start with the government, community leaders and other influential actors in Uganda. Further, girls and women in the field should be educated on the issues of virginity together with locally trusted organizations. Three interviewees confirmed that association with trusted organizations may increase credibility. The literature review and the case study emphasizes that the information and education must be developed in collaboration with local actors and that it needs to be continuously evaluated and improved.

Compared to the innovators and early adopters, the early majority is assumed to be less educated, more reluctant to adopt new ideas, and less likely to actively search for information about a new product. To increase the awareness among the early majority, the literature review suggests that smaller segments within each geographical area need to be identified and targeted with customized marketing. Hytti (2017) confirms the need for customized marketing. The case study showed that targeting young girls had been successful in some areas, confirmed by Hytti (2017) and Wiegaard Kjaer (2017). However, Semanda (2017) argued that women over 18 would be more appropriate, implying that a deep understanding of the local culture is needed. To raise awareness among identified segments, the need for promotion and marketing was emphasized by six interviewees. Commercials that are more expensive to produce, such as a TV commercial, could be made nationwide by including girls and women from different geographical segments. For more targeted marketing, through social media and posters, collaboration with local actors should be used to gain a deeper understanding of a specific market. In the literature review, using local humor was suggested as a strategy to address taboo subjects. However, the use of humor to market the menstrual cup was not suggested as a strategy in the case study. Whereas it could be considered, the risk of using humor when dealing with such a serious topic needs to be taken into consideration. Instead, Kyoyagala-Tomusange (2017) suggested that famous singers may be an efficient way of addressing the Ugandan youth.

The prioritized challenges discussed to reach the early majority and how to address them are summarized in the figure below.

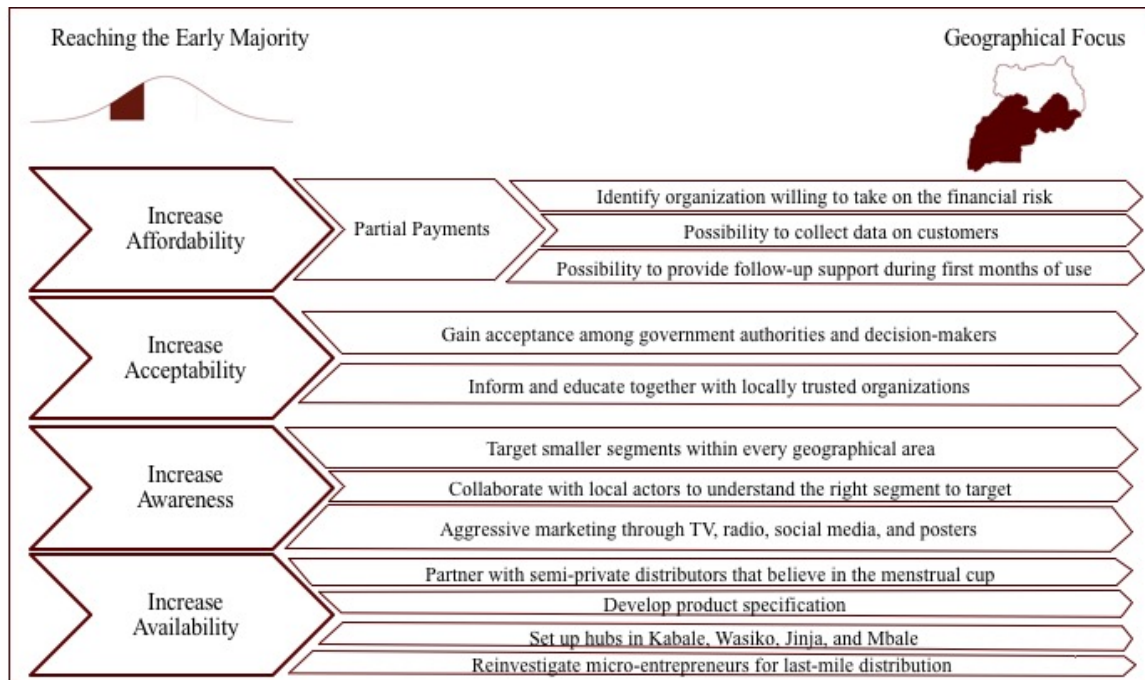


Figure 17. Prioritized challenges to reach the early majority and how to address them. (Hagander & Velin 2017)

### Reaching the Late Majority

The late majority are considered to be located in the poorer regions of Uganda, mainly in rural areas. Whereas the need for feminine hygiene products may be the largest within this segment, the lack of feminine hygiene products is not necessarily perceived to be an issue. As Hytti (2017) argued, not all girls and women view the lacking ability to properly manage their menstruation as a problem and may therefore not see the value of the menstrual cup. In the literature review, the example of Hindustan Unilever's launch of a water-purifier demonstrated that just because the customer needs a product, it does not mean that they see the value of it due to a lack of awareness of product benefits. Thus, the *need* for the menstrual cup must be transformed into *want*, which presents a challenge when aiming to reach the late majority. Further, reaching the late majority includes major challenges regarding affordability, acceptability and sanitation.

The late majority does not only have a low ability to pay, but is also an expensive segment to target. As stated by Simanis (2012), the cost of customer acquisition of the late majority may be higher since they experience greater novelty in new products and need more information and education to adopt them. The high cost of customer acquisition was confirmed by Hytti (2017) and Mosuke (2017). Further, both the case study and literature review confirms that operational costs such as last-mile distribution are higher, which is enhanced due to the dispersity of the late majority. Therefore, reaching the late majority will be a social activity, independently of if a subsidization or donation approach is chosen. The low ability to pay, combined with the high costs, implies that the customer base must be big in order for even subsidized sales to be defensible. By choosing a donation approach the demand can be predicted to a higher extent and the implementation process can be controlled to a higher extent. Further, Hytti (2017) and Nsereko & Sebukyo (2017) argued for donations being a demand creating activity in the long term. However, Brennan & Breitbach (2017) and emphasized the risks of donation and as few people would be willing to pay for something that someone is getting for free. It is therefore important that donation programs are implemented in

geographically different areas from where the menstrual cup is being sold. Thus, the girls and women that live in areas where innovators, early adopters and early majority make up a large part of the population, as for example Kampala, should not be targeted for donation programs.

The issue of virginity, mentioned as a challenge by five interviewees, as well as the issue of sanitation, mentioned as a challenge by four interviewees, must be considered before implementing a donation program. As Hytti (2017) describes, the initial skepticism toward vaginal products can often be overcome by education. However, as B-Space (2014) suggest, vaginal insertion may be too large of a barrier for some. Due to the cultural diversity of Uganda, confirmed by Otiso (2006), the perception of virginity must first be evaluated in order to gain an understanding of if the challenge can be overcome. Further, the lack of access to water, stated by the Ugandan Bureau of Standards (2016), must be taken into consideration when choosing where to implement donation programs.

The prioritized challenges to reach the late majority and how to address them are summarized in the figure below.

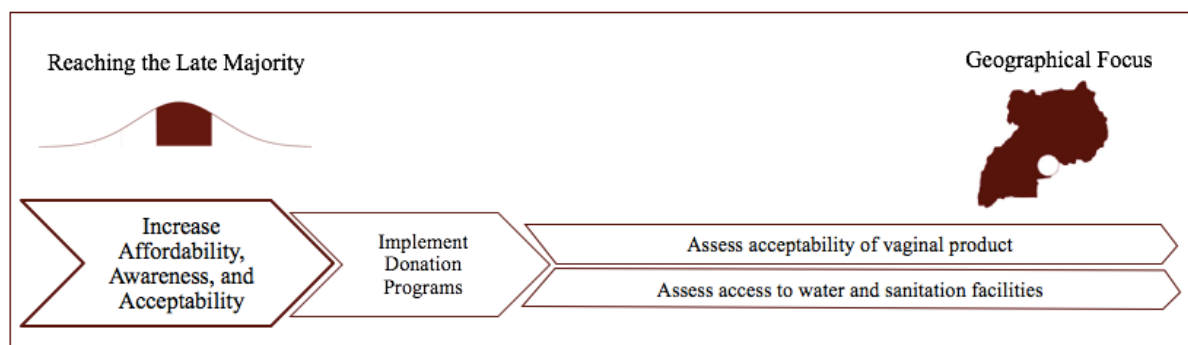


Figure 18. Prioritized challenges to reach the late majority and how to address them. (Hagander & Velin 2017)

### Reaching the Laggards

Laggards have been defined as those who will not adopt the menstrual cup due to cultural barriers. Therefore, resources to reach this segment should not be prioritized.

### The Way Forward

Following the sub-sections above, a three-step framework has been created to summarize the suggested strategies. To address the prioritized challenges for each segment of adopters in an effective manner, strategies to reach the different segments should be implemented simultaneously. However, addressing all prioritized challenges at once risks being an inefficient approach, especially due to the few and small actors on the market for menstrual cups in Uganda. Therefore, a structured approach for addressing prioritized challenges is of increased importance. The framework aims to provide an overview of how to address the challenges connected to mainstreaming the menstrual cup in Uganda, and thereby enable coordination of efforts.

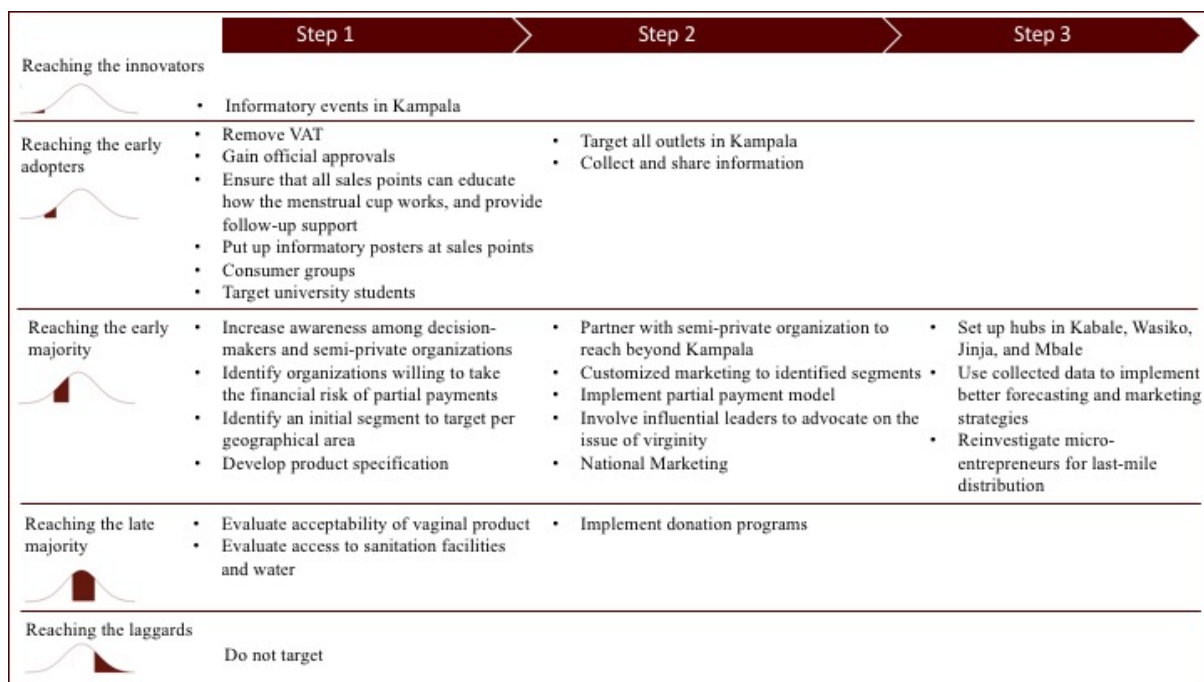


Figure 19. A three-step-framework for addressing the prioritized challenges connected to mainstreaming the menstrual cup in Uganda (Hagander & Velin 2017)

The framework addresses the majority of the most important challenges identified in the case study. Important to acknowledge, is that the framework aims to provide guidance for how to initiate the process of mainstreaming the menstrual cup in Uganda based on the current situation. Therefore, as conditions and circumstances may change with time, a continuous evaluation of challenges and appropriate strategies is required. Further, the steps in the framework do not represent time, but rather areas of prioritization. Initially, the strategies in step one should be prioritized. However, when the prioritization shifts to step two, strategies in the previous step should not be neglected. Whereas some strategies can be completed, strategies such as marketing and promotion, should be continuously implemented. The reason for the categorization of steps is that strategies in step two and three require that certain strategies have been implemented in previous steps. To better understand the framework, the relationship between the suggested strategies in the different steps will be explained.

First, the relationship between the strategies in step two and the strategies in step one is clarified. The strategy to target all types of outlets in Kampala is recommended in the second step as it is believed to be more effective once VAT exemption and official approvals are in place. Further, the success of collecting and sharing information is believed to depend on having trained sellers of the menstrual cup to ensure that relevant information is collected. The reason for partnering with semi-private organizations being in step two, is that awareness among semi-private organizations should first be increased to evaluate who is best capable and willing to push for the product before partnering. The same reasoning is applicable for first increasing awareness among decision-makers, and then involving influential leaders to advocate on the issue of virginity in step two. National marketing is also argued to require increased awareness among decision-makers as well as official approvals. Further, the partial payment model can only be implemented if an organization willing to take the financial risk has been identified, and customized marketing can only be done once initial segments to target have been identified. Lastly, donation programs should be implemented after acceptability to vaginal insertion and access to water and sanitation facilities have been evaluated.

Three strategies have been suggested in step three. First, hubs outside of Kampala should be set up once a partnership with a semi-private organization for distribution has been initiated. Further, forecasting can only be implemented once data collection and information sharing has been structured in previous steps. Last, the use of micro-entrepreneurs for last-mile distribution should be reinvestigated once demand has been observed. Since the partial payment model aims to increase demand outside of Kampala, the use of micro-entrepreneurs should be initiated after the new payment model has been implemented.

The effect of suggested strategies in the three-step framework have been analyzed according to the three themes of the research framework for the study: adoption, demand, and availability. The availability of menstrual cups would initially be unchanged with Samantha Musoke representing the hub in Kampala. Availability within Kampala would expand further in step two when more outlets are targeted to sell the product. By setting up hubs in Jinja, Mbale, Wakiso and Kabale as well, availability would increase to cover the Eastern, Central, and Western region in step three. Regarding current demand, it has been confirmed by the majority of interviewees to be low. The literature review found three main categories of challenges when creating demand: affordability, acceptability and awareness. The three most frequently mentioned challenges in the case study were lacking awareness of the menstrual cup's existence, function and value, an unaffordable price, and skepticism of a new and foreign product. These three challenges imply that all three categories affecting demand currently present significant barriers that must be overcome to increase demand for menstrual cups in Uganda. Further, as Musoke (2017) confirms that almost all her sales currently come from NGOs that are doing pilot projects, rather than individual Ugandan girls and women, demand is estimated to be just above one on a scale from 1-5. To analyze the impact on demand when implementing the strategies suggested in the three-step framework, the impact on the likelihood of adoption is analyzed. If the likelihood to adopt the menstrual cup increases, the demand is expected to follow.

The impact of the strategies suggested in the three-step framework on the six factors affecting likelihood of adoption are calculated in Appendix 8.6. Although demand and likelihood of adoption are believed to be closely related, they are not expected to have a linear relationship. As the empirical findings described the six factors to be of different importance for the menstrual cup to be adopted in Uganda, importance should be taken into consideration when analyzing how improvements among the six factors would affect the demand. The improvement of the six factors for every step, and the resulting improved demand, can be found in Appendix 8.7.

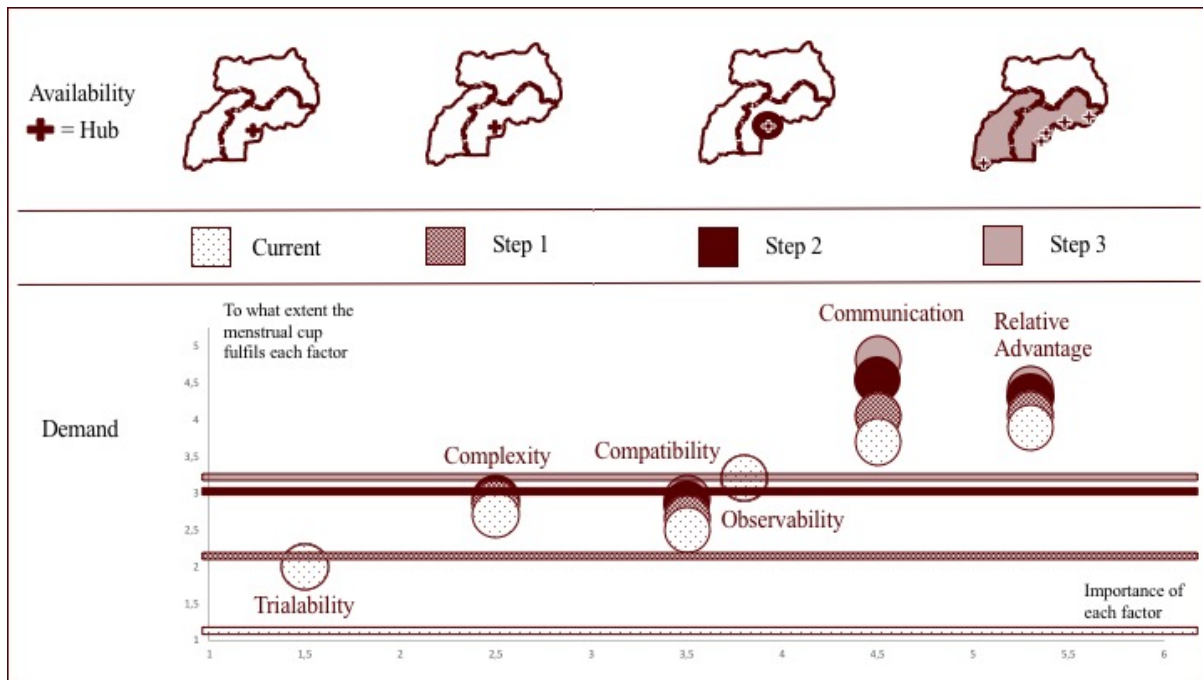


Figure 20. The evaluated impact on availability and demand if the three-step framework is implemented. (Hagander & Velin 2017)

As can be seen in the figure above, the first part of the three-step framework focuses more on creating demand and the last step focuses on creating availability to supply that demand. As confirmed by Castelijns (2017), demand has to be created first. However, it is important to take into consideration that figure 20 is based on interpreted qualitative data, and aims to provide an indication of how the demand potentially could evolve. Therefore, it does not aim to provide an exact prediction, but rather a visualization of development over time.

## 6. Conclusion

Mainstreaming the menstrual cup in Uganda proposes several challenges that must be overcome. Currently, pilot studies have been done with varied price points, segments and locations. The results have shown a positive reaction to the menstrual cup and thereby confirmed a potential for the product in Uganda. However, being a complex product with limited compatibility with the Ugandan context, the uptake of the product has been slow. For the menstrual cup to become a mainstream product for menstrual hygiene management in Uganda, three research questions have been addressed.

### 6.1 RQ1: Challenges Connected to Creating Demand for Menstrual Cups in Uganda

The challenges connected to creating a demand for the menstrual cup were identified to be related to affordability, acceptability and awareness. Mainly due to the large initial cost, the menstrual cup is unaffordable to a large part of the population. Further, to the part of the population that can afford it, it is perceived as an expensive product compared to its substitutes. Additionally, the menstrual cup faces skepticism due to it being a new and foreign product that requires insertion into the vagina. The skepticism is enhanced by the lack of association with known brands and lack of official support from the government. The awareness of the menstrual cup and its function is currently low among the Ugandan population and was identified as the most important challenge to address. Further, lack of product understanding among decision-makers was proven to be a challenge for the menstrual cup in Uganda. Increasing awareness is challenging due to the taboo surrounding menstruation, and the fact that Uganda consists of many different cultures and ethnic groups that require customized marketing.

### 6.2 RQ2: Challenges Connected to Creating Availability for Menstrual Cups in Uganda

The challenges connected to creating availability of the menstrual cup were identified to be related to infrastructure, service providers, regulations, and information. As most Ugandans are located in rural areas with poor access to reliable infrastructure, and outlets are reluctant to stock the menstrual cup due to the financial risk, creating availability to the remote areas is challenging. Finding a service provider who is willing to educate and promote the menstrual cup is especially important, but proposes a challenge due to the taboo surrounding menstruation. There are no regulations that are specifically prohibiting the menstrual cup at the moment. However, the assigned VAT of 18% and lack of official approvals from the government hinder the menstrual cup from becoming more available as service providers are reluctant to the risk of distributing a valuable non-approved product. Further, the VAT makes the menstrual cup even more expensive in comparison to its substitutes that are exempted from VAT. Lastly, there is a general lack of data on menstrual cups which prohibits the coordination between actors. The lack of sales and customer information also creates a challenge to forecast demand and identify patterns.

### 6.3 RQ3: Prioritizing and Addressing Identified Challenges

To create a structure for how to coordinate efforts to address the identified challenges, the challenges can be prioritized and addressed according to the five segments to adopters: innovators, early adopters, the early majority, late majority, and laggards. To initiate the process of mainstreaming the menstrual cup in Uganda, a three-step framework is suggested. The framework addresses the most important challenges prohibiting the menstrual cup from becoming a mainstream alternative, by suggesting strategies to reach the different categories of adopters in three steps. The first step focuses on increasing awareness among women in Kampala and decision-makers. Further, follow-up support and product information needs to be available at all sale points. Last, regulatory issues must be addressed to enable an increased affordability and availability. The second step focuses on increasing availability in Kampala, and increasing awareness through customized and national marketing. By involving influential leaders to advocate on the issue of virginity, the acceptance of the menstrual cup can be increased. Further, a partial payment model should be implemented to overcome the barrier of a perceived high price compared to substitutes. The third step focuses on increasing availability in the Western, Central and Eastern regions.

### 6.4 Contribution to Theory and Practice

The menstrual cup is rising on the agenda as an alternative for menstrual hygiene management. Previous studies have shown a potential for the product in a developing context, through donation programs in countries like Kenya, Uganda and South Africa. However, previous studies are mainly concerned with whether the menstrual cup is accepted and rated positively by individual users, and not with how to reach the mainstream market. Further, Roger's (2003) Innovation Diffusion Theory is a general model, applied by Moore (1998) for high-tech innovations, and does therefore not take the circumstances of the Ugandan context or a taboo product into account. To reach beyond pilot projects and general theory, our study aims to contribute to theory by applying existing innovation diffusion theory on the menstrual cup in Uganda. Thereby, a greater understanding for the categories of adopters of the menstrual cup in Uganda can be obtained, as well as a greater understanding for how the theory of diffusion can be applied in new contexts and for new products.

The finding that surprised us the most in the study, was that the limited affordability of Ugandan girls and women was not the largest barrier to mainstream the menstrual cup. Instead, lack of awareness of the product's existence, function and value was emphasized in the study. Several interviewees pressed the fact that if a Ugandan girl or woman sees the value in the product, she will find a way to buy it regardless of its price. These findings may be generalized over different countries and products. When introducing a new and foreign product to a developing context, conveying the value of the product should be the primary focus.

The study contributes to practice from several perspectives. First, the non-profit organizations implementing projects related to the menstrual cup in Uganda, can obtain a deeper understanding for which activities to focus on in order to increase the demand and availability. Second, actors currently selling the menstrual cup in Uganda can gain an increased understanding for the market, and how to target and reach new customers. Third, the prioritization of challenges, and suggestions on how they can be addressed, will enable an increased coordination of efforts between all current actors. The coordination of efforts is especially important since no actor is large enough to overcome the challenges alone. Fourth, the study provides clarity for new actors who may want to enter the market, and enables them to coordinate efforts with current players. It would be of particular value if the study



increased awareness among larger organizations, such as UNFPA. Their support could improve the affordability, acceptability, awareness, and availability of the menstrual cup among the Ugandan population. Further, the study can be used as a foundation when identifying a partner for distribution and an actor willing to take on the financial risk that the implementation of the partial payment model requires. Last, the study provides insights related to introducing a new product in the Ugandan context, especially if the product related to reproductive health.

## 6.5 Future Research

The study focused on the market for menstrual cups in Uganda and included a single-case study. To extend the research, similar studies on the market for menstrual cups should be done in other developing contexts. Specifically, Kenya could be of interest. Since Ruby Cup distributes menstrual cups to Kenya as well, and the product was recently officially approved by the Kenyan government, a deeper understanding of the challenges in the Kenyan environment and the effect of such an approval should be investigated. Further, both the literature review and case study mentioned that having to insert the menstrual cup into the vagina is not problematic for all Ugandan girls and women. However, research on what Ugandan cultures that perceive virginity as an intact hymen, and their geographical spread, is lacking to the best of our knowledge. Mapping the areas where a broken hymen is not necessarily a cultural issue, would be valuable for identifying strategic segments to target for the menstrual cup.

## 6.6 Concluding Reflection

The menstrual cup has the potential to improve the quality of life for Ugandan girls and women. Studies show that the menstrual cup is preferred over substitutes and that girls and women experience less leakage, odor, and discomfort. However, several challenges connected to affordability, acceptability, awareness, and availability, need to be addressed before Ugandan girls and women can adopt the menstrual cup. To provide Ugandan girls and women with the possibility to better manage their menstruation, a coordinated effort from all actors is needed. Our study seeks to create a deep understanding for the current situation, and structure an appropriate way forward for mainstreaming the menstrual cup in Uganda. The way forward includes increased awareness among decision-makers and larger organizations to absorb the financial risk, increased affordability through partial payments, heavy investments in marketing and education, and increased availability. To mainstream the menstrual cup may propose many challenges, but with coordinated efforts, they can be overcome.

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## 8. Appendixes

### 8.1 Interview Guide for Semi-Structured Interviews

#### 1. Introduction

- a. Interviewers introduce themselves, their connection to Industrial engineering and management at Lund University, and their project scope.
- b. The purpose of the interview is introduced: To learn about the challenges the interviewee sees with creating a demand and distributing menstrual cups in Uganda, and how they can be overcome.
- c. Permission to record the interview is asked for.
- d. The interviewee is asked to introduce him or herself.
- e. The interviewee is asked if he/she has any questions to us before we start.

#### 2. Knowledge building questions:

##### *Affordability*

- a. What would you estimate to be an affordable price of the menstrual cup for girls and women in Uganda?
- b. What challenges are making it difficult to lower the price for menstrual cups in Uganda?
- c. How do you think these challenges can be overcome?

##### *Awareness & Acceptability*

- d. What is the current awareness and acceptance of the menstrual cup in Uganda?
- e. What challenges do you see in increasing the awareness and acceptance of the menstrual cup?
- f. What challenges do you see connected to marketing the cup and educating girls and women to make an informed decision?
- g. What segment is currently targeted for the menstrual cup?
- h. What challenges do you see connected to the segmentation and targeting of the market for menstrual cups in Uganda?
- i. How do you think these challenges can be overcome?

##### *Infrastructure*

- j. How available is the menstrual cup on the Ugandan market today?
- k. How are the menstrual cups currently distributed across Uganda?
- l. What challenges are connected to infrastructure?
- m. What challenges are connected to last-mile distribution?
- n. How do you think these challenges can be overcome?

##### *Service Providers*

- o. What challenges do you see with setting up, enforcing, and ending agreements?
- p. What are the challenges with aligning incentives with collaborative partners along the distribution channel?
- q. What challenges are connected to carrying inventory along the distribution network?

- r. How do you think these challenges can be overcome?

*Regulations*

- s. What challenges do you see regarding regulations for the menstrual cup in Uganda?
- t. What challenges do you see regarding changing government policies for the menstrual cup in Uganda?
- u. What challenges do you see regarding corruption in Uganda?
- v. How do you think these challenges can be overcome?

*Information*

- w. What challenges are connected to sharing information, such as stock-outs, deliveries and orders, among actors in the distribution of menstrual cups in Uganda?
- x. What challenges are connected to forecasting the market for menstrual cups in Uganda?
- y. How do you think these challenges can be overcome?

**3. Follow up**

- a. Go back to interesting comments from the interview and ask the interviewee to elaborate more on the subject.
- b. Are there any other challenges or strategies related to creating demand and distributing menstrual cups in Uganda that you would like to add?
- c. Is there anything else you would like to add?

**4. Round up**

- a. Thank the interviewee for his/her participation.
- b. The interviewee is asked for the correct contact information including name, job title, role in the organization, length of experience, email address and phone number.
- c. The interviewee is asked if there are any other contacts he/she would recommend for us to talk to, or data that would be relevant to send to us.

## 8.2 Complementary Questionnaire

1. Please rate the menstrual cup's performance in the following categories from 1-5 (1 being the worst/most complex, 5 being the best/least complex) with regards to the Ugandan context:
  - a. **Relative advantage:** The benefits of adopting the menstrual cup compared to the costs and in relation to other alternatives
  - b. **Compatibility:** The extent to which adopting and using the menstrual cup is based on existing ways of doing things and standard cultural norms
  - c. **Complexity:** The difficulty involved in using the menstrual cup
  - d. **Trialability:** The extent to which a new product can be tried on a limited basis
  - e. **Communication:** The ease and clarity with which benefits of owning and using the menstrual cup can be communicated to prospective users
  - f. **Observability:** The extent that benefits of the menstrual cup are observable to everyone
2. Please list the categories above in the order of importance you believe accurate for a Ugandan woman to adopt the product.

## 8.3 Coded Data from Interviews

Category	Challenges mentioned	Interviewees identifying challenge	# of interviewees that identified challenge
Affordability	Current price is unaffordable to the vast majority	Semanda, Miner, Were, Kyoyagala-Tomusange, Musoke, Nakalema, Nsereko & Sebukyu	7
Affordability	The product is perceived as expensive in comparison to substitutes	Hytti, Were, Kyoyagala-Tomusange, Musoke, Nsereko & Sebukyu	5
Affordability	Difficult to find the right price point	Weigaard Kjaer, Hytti, Musoke	3
Affordability	Low and uncertain demand increases costs	Hytti, Musoke	2
Affordability	Customer acquisition is costly	Hytti, Musoke	2
Acceptability	Skepticism due to new and foreign product	Semanda, Weigaard Kjaer, Miner, Hytti, Musoke, Nakalema, Nsereko & Sebukyu	7
Acceptability	Skepticism due to vaginal insertion	Semanda, Hytti, Were, Musoke, Nakalema	5
Acceptability	Lack of support from government and community leaders	Semanda, Hytti, Were, Musoke, Nakalema	5
Awareness	Awareness of the menstrual cup's existence, function and value is currently low	Semanda, Weigaard Kjaer, Miner, Hytti, Were, Kyoyagala-Tomusange, Musoke, Nakalema, Nsereko & Sebukyu	9
Awareness	Taboo subject hinders word-of-mouth effect	Semanda, Musoke	2
Awareness	Cultural diversity requires customized marketing to different segments	Hytti	1
Infrastructure	Poor infrastructure to reach rural areas	Miner, Hytti, Muathe, Mohammed, Castelijns, Breitbach & Brennan	6
Infrastructure	Lack of availability	Semanda, Miner, Hytti, Musoke	4
Infrastructure	Lack of appropriate sanitation facilities and access to water	Weigaard Kjaer, Were, Kyoyagala-Tomusange, Nsereko & Sebukyu	4
Infrastructure	Last-mile distribution is expensive and complicated	Muathe, Mohammed, Castelijns	3
Infrastructure	Last-mile distribution with micro-entrepreneurs is challenging due to long product life time	Weigaard Kjaer	1
Regulations	No stamped approvals from the National Bureau of Standards or the National Drug Authority	Semanda, Were, Hytti, Kyoyagala-Tomusange	4
Regulations	The menstrual cup is assigned value-added tax, which its substitutes are not	Semanda, Musoke	2
Regulations	Uncertainties related to the import process may cause delays	Weigaard Kjaer, Hytti	2
Service Providers	Reluctance to hold stock	Semanda, Miner, Hytti, Musoke, Nsereko & Sebukyu, Brennan & Breitbach	6
Service Providers	Product needs information and promotion with its distribution	Weigaard Kjaer, Hytti, Nsereko & Sebukyu	3
Service Providers	Not all service providers are capable and willing to push the product	Weigaard Kjaer, Castelijns, Hytti	3
Service Providers	Conflicting interests due to different political and financial agendas	Were, Castelijns	2
Information	Information is lacking and no forecasting techniques are used	Semanda, Weigaard Kjaer, Were, Kyoyagala-Tomusange	4
Information	Information sharing between different actors is lacking	Musoke	1

Category	Strategies mentioned	Interviewees identifying the strategy	# of interviewees that identified challenge
Affordability	Test new payment models	Semanda, Hytti, Musoke	3
Affordability	Guaranteed volumes of sale could lower the sales price	Semanda, Were	2
Affordability	Target different segments at different price points	Hytti	1
Affordability	Remove VAT	Musoke, Kyoyagala-Tomusange	2
Acceptability	Association with trusted established organization	Weigaard Kjaer, Hytti, Miner	3
Acceptability	Provide follow-up support	Semanda, Hytti	2
Acceptability	Involve government and community leaders to do advocacy	Hytti, Nakalema, Castelijns,	3
Acceptability	Education about the issue of virginity	Hytti, Nakalema	2
Awareness	Education about how the menstrual cup works	Kyoyagala-Tomusange, Hytti, Weigaard Kjaer, Semanda, Musoke	5
Awareness	Promotion and marketing	Were, Brennan & Breitbach, Semanda, Nakalema, Musoke, Hytti	6
Awareness	Selective segmentation	Semanda, Hytti, Nsereko & Sebukyu	3
Infrastructure	Use micro-entrepreneurs who do not solely depend on the income of the cup	Weigaard Kjaer	1
Infrastructure	Bundle with other products for last-mile distribution	Weigaard Kjaer, Castelijns	2
Infrastructure	Partner with organizations with established distribution channels	Castelijns, Were, Hytti, Kyoyagala-Tomusange	4
Service Providers	Assess willingness to push product before partnering	Castelijns	1
Service Providers	Work together to create a concrete product specification	Hytti	1
Service Providers	Target all outlets, especially convenience stores that have the liquidity to hold stock	Nsereko & Sebukyu	1
Service Providers	Reduce financial risk	Musoke, Kyoyagala-Tomusange	2
Regulations	Continue to apply for approvals and VAT exemption	Musoke, Hytti	2
Regulations	Partner to smoothen import process	Castelijns	1
Information	Collect information about customer preferences	Hytti, Musoke	2
Information	Partner to smoothen import process and simplify planning and forecasting	Castelijns	1

## 8.4 Calculation of Importance of Challenges in Case Study

Challenges mentioned	Interviewees included	# of interviewees included	Interviewees identifying challenge	# of interviewees that identified challenge	% of interviewees that identified challenge	Importance
Awareness of the menstrual cup's existence, function and value is currently low	Semanda, Weigaard Kjaer, Miner, Hytti, Were, Kyoyagala-Tomusange, Musoke, Nakalema, Nsereko & Sebuku	9	Semanda, Weigaard Kjaer, Miner, Hytti, Were, Kyoyagala-Tomusange, Musoke, Nakalema, Nsereko & Sebuku	9	1,00	High
Current price is unaffordable to the vast majority	Semanda, Weigaard Kjaer, Miner, Hytti, Were, Kyoyagala-Tomusange, Musoke, Nakalema, Nsereko & Sebuku	9	Semanda, Miner, Were, Kyoyagala-Tomusange, Musoke, Nakalema, Nsereko & Sebuku	7	0,78	High
Skepticism due to new and foreign product	Semanda, Weigaard Kjaer, Miner, Hytti, Were, Kyoyagala-Tomusange, Musoke, Nakalema, Nsereko & Sebuku	9	Semanda, Weigaard Kjaer, Miner, Hytti, Musoke, Nakalema, Nsereko & Sebuku	7	0,78	High
Reluctance to hold stock	Semanda, Weigaard Kjaer, Miner, Hytti, Were, Kyoyagala-Tomusange, Musoke, Nsereko & Sebuku, Castelijns, Brennan & Breithach	10	Semanda, Miner, Hytti, Musoke, Nsereko & Sebuku, Brennan & Breithach	6	0,60	Medium-High
The product is perceived as expensive in comparison to substitutes	Semanda, Weigaard Kjaer, Miner, Hytti, Were, Kyoyagala-Tomusange, Musoke, Nakalema, Nsereko & Sebuku	9	Hytti, Were, Kyoyagala-Tomusange, Musoke, Nsereko & Sebuku	5	0,56	Medium-High
Skepticism due to vaginal insertion	Semanda, Weigaard Kjaer, Miner, Hytti, Were, Kyoyagala-Tomusange, Musoke, Nakalema, Nsereko & Sebuku	9	Semanda, Hytti, Were, Musoke, Nakalema	5	0,56	Medium-High
Lack of support from government and community leaders	Semanda, Weigaard Kjaer, Miner, Hytti, Were, Kyoyagala-Tomusange, Musoke, Nakalema, Nsereko & Sebuku	9	Semanda, Hytti, Were, Musoke, Nakalema	5	0,56	Medium-High
Poor infrastructure to reach rural areas	Semanda, Weigaard Kjaer, Miner, Hytti, Were, Kyoyagala-Tomusange, Musoke, Nsereko & Sebuku, Muathe, Mohammed, Castelijns, Brennan & Breithach	12	Miner, Hytti, Muathe, Mohammed, Castelijns, Breithach & Brennan	6	0,50	Medium-High
No stamped approvals from the National Bureau of Standards or the National Drug Authority	Semanda, Weigaard Kjaer, Miner, Hytti, Were, Kyoyagala-Tomusange, Musoke, Nsereko & Sebuku	8	Semanda, Were, Hytti, Kyoyagala-Tomusange	4	0,50	Medium-High
Lack of availability	Semanda, Weigaard Kjaer, Miner, Hytti, Were, Kyoyagala-Tomusange, Musoke, Nakalema, Nsereko & Sebuku	9	Semanda, Miner, Hytti, Musoke	4	0,44	Medium-Low
Lack of appropriate sanitation facilities and access to water	Semanda, Weigaard Kjaer, Miner, Hytti, Were, Kyoyagala-Tomusange, Musoke, Nakalema, Nsereko & Sebuku	9	Weigaard Kjaer, Were, Kyoyagala-Tomusange, Nsereko & Sebuku	4	0,44	Medium-Low
Information is lacking and no forecasting techniques are used	Semanda, Weigaard Kjaer, Miner, Hytti, Were, Kyoyagala-Tomusange, Musoke, Nsereko & Sebuku, Castelijns, Brennan & Breithach	10	Semanda, Weigaard Kjaer, Were, Kyoyagala-Tomusange	4	0,40	Medium-Low
Difficult to find the right price point	Semanda, Weigaard Kjaer, Miner, Hytti, Were, Kyoyagala-Tomusange, Musoke, Nakalema, Nsereko & Sebuku	9	Weigaard Kjaer, Hytti, Musoke	3	0,33	Medium-Low
Product needs information and promotion with its distribution	Semanda, Weigaard Kjaer, Miner, Hytti, Were, Kyoyagala-Tomusange, Musoke, Nsereko & Sebuku, Nakalema	9	Weigaard Kjaer, Hytti, Nsereko & Sebuku	3	0,33	Medium-Low
Last-mile distribution is expensive and complicated	Semanda, Weigaard Kjaer, Miner, Hytti, Were, Kyoyagala-Tomusange, Musoke, Nsereko & Sebuku, Muathe, Mohammed, Castelijns, Brennan & Breithach	12	Muathe, Mohammed, Castelijns	3	0,25	Medium-Low
The menstrual cup is assigned value-added tax, which its substitutes are not	Semanda, Weigaard Kjaer, Miner, Hytti, Were, Kyoyagala-Tomusange, Musoke, Nsereko & Sebuku	8	Semanda, Musoke	2	0,25	Medium-Low
Not all service providers are capable and willing to push the product	Semanda, Weigaard Kjaer, Miner, Hytti, Were, Kyoyagala-Tomusange, Musoke, Nsereko & Sebuku, Muathe, Mohammed, Castelijns, Brennan & Breithach	12	Weigaard Kjaer, Castelijns, Hytti	3	0,25	Medium-Low
Low and uncertain demand increases costs	Semanda, Weigaard Kjaer, Miner, Hytti, Were, Kyoyagala-Tomusange, Musoke, Nakalema, Nsereko & Sebuku	9	Hytti, Musoke	2	0,22	Low
Customer acquisition is costly	Semanda, Weigaard Kjaer, Miner, Hytti, Were, Kyoyagala-Tomusange, Musoke, Nakalema, Nsereko & Sebuku	9	Hytti, Musoke	2	0,22	Low
Taboo subject hinders word-of-mouth effect	Semanda, Weigaard Kjaer, Miner, Hytti, Were, Kyoyagala-Tomusange, Musoke, Nakalema, Nsereko & Sebuku	9	Semanda, Musoke	2	0,22	Low
Conflicting interests due to different political and financial agendas	Semanda, Weigaard Kjaer, Miner, Hytti, Were, Kyoyagala-Tomusange, Musoke, Nsereko & Sebuku, Muathe, Mohammed, Castelijns, Brennan & Breithach	12	Were, Castelijns	2	0,17	Low
Uncertainties related to the import process may cause delays	Semanda, Weigaard Kjaer, Miner, Hytti, Were, Kyoyagala-Tomusange, Musoke, Nsereko & Sebuku, Muathe, Mohammed, Castelijns, Brennan & Breithach	12	Weigaard Kjaer, Hytti	2	0,17	Low
micro-entrepreneurs is challenging due to long product life time	Semanda, Weigaard Kjaer, Miner, Hytti, Were, Kyoyagala-Tomusange, Musoke, Nsereko & Sebuku	8	Weigaard Kjaer	1	0,13	Low
Information sharing between different actors is lacking	Semanda, Weigaard Kjaer, Miner, Hytti, Were, Kyoyagala-Tomusange, Musoke, Nsereko & Sebuku	8	Musoke	1	0,13	Low
Cultural diversity requires customized marketing to different segments	Semanda, Weigaard Kjaer, Miner, Hytti, Were, Kyoyagala-Tomusange, Musoke, Nakalema, Nsereko & Sebuku	9	Hytti	1	0,11	Low

Strategy Identified in case study		Factor	Challenges addressed	Importance of each challenge calculated in case study	Potential Impact – sum of importance
Test new payment models	Relative Advantage	The product is perceived as expensive in comparison to substitutes Current price is unaffordable to many	0.56 0.78	1.34	
Guaranteed volumes of sale could lower the sales price	Relative Advantage	Reluctance to hold stock The product is perceived as expensive in comparison to substitutes	0.6 0.56	1.16	
Target different segments at different price points	Relative Advantage	Current price is unaffordable to many The product is perceived as expensive in comparison to substitutes Current price is unaffordable to many	0.78 0.56 0.78 0.6	0.78	
Remove VAT	Relative Advantage	Reluctance to hold stock Skepticism due to new and foreign product Skepticism due to vaginal insertion	0.78 0.56 0.56	1.94	
Association with trusted established organization	Communication	Skepticism due to new and foreign product	0.78	1.34	
Provide follow-up support	Complexity	Awareness of the menstrual cup's existence, function and value is low Skepticism due to new and foreign product Skepticism due to vaginal insertion	0.78 0.56 0.56	1.78	
Involve government and community leaders to do advocacy	Communication	Awareness of the menstrual cup's existence, function and value is low	1	2.34	
Education about the issue of virginity	Compatibility	Skepticism due to vaginal insertion	0.56	0.56	
Education about how the menstrual cup works	Complexity	Skepticism due to new and foreign product Awareness of the menstrual cup's existence, function and value is low	0.78 1	1.78	
Promotion and marketing	Communication	Awareness of the menstrual cup's existence, function and value is low Taboo subject hinders word of mouth effects Awareness of the menstrual cup's existence, function and value is low Current price is unaffordable to many Taboo subject hinders word of mouth effects Cultural diversity requires customized marketing to different segments	0.22 1 0.78 0.22 0.11	1.22	
Selective segmentation	Communication			2.11	
Use micro-entrepreneurs who do not solely depend on the income of the cup	Not applicable, concerns availability				
Bundle with other products for last-mile distribution	Not applicable, concerns availability				
Partner with organizations with established distribution channels	Not applicable, concerns availability				
Assess willingness to push product before partnering	Not applicable, concerns availability				
Work together to create a concrete product specification	Not applicable, concerns availability				
Target all outlets, especially convenience stores that have the liquidity to hold stock	Not applicable, concerns availability				
Reduce financial risk	Not applicable, concerns availability				
Continue to apply for approvals and VAT exemption	Not applicable, concerns availability				
Partner to smoothen import process	Not applicable, concerns availability				
Collect information about customer preferences	Not applicable, concerns availability				
Partner to smoothen import process and simplify planning and forecasting	Not applicable, concerns availability				



## 8.6 Calculation of Impact on the Six Factors according to Three-Step Framework

Strategies in step 1		Factor	Challenges addressed	Comment	Importance of each challenge calculated in one study	Impact = sum of importance	Factor	Sum Impact	Sum Impact/2
Strategies in step 1	Information events in Kampala	Communication	Awareness of the medicinal cups existence, function and value is low		0.38 0.56 0.6	1	Relative Advantage	1.94	0.16
	Remove VAT	Relative Advantage	The product is perceived as expensive in comparison to other products Reluctance to hold stock		0.56 0.6	1.94	Compatibility	1.88	0.16
	Gain official approval	Compatibility	Standards of the National Drug Authority Suspicion due to new and foreign product Reluctance to hold stock		0.53 0.78 0.6	1.88	Complexity	1.78	0.15
	Business awareness among decision-makers and semi-private organizations	Communication	Lack of support from government and community The product is perceived as expensive in comparison to substitutes		0.56 1	1.56	Communication	4.23	0.35
	Identify organizations willing to take the financial risk of partial payments	Relative Advantage		No effect in this step	-	-	Observability	0	0
	Identify initial segment to target per geographical area	Communication	Tobacco subject hinders word-of-mouth Cultural diversity requires customized marketing to different segments	No effect in this step	-	-	Trialability	0	0
	Provision responsibility of original product	Compatibility	Suspicion due to vaginal insertion	No effect in this step	-	-			
	Evolution access to sanitation facilities and water	Complexity	Lack of appropriate sanitation facilities reduces access to water	No effect in this step	-	-			
	Develop product specification	Communication	Lack of support from government and community Inadequate product needs information and promotion with its		0.38 0.56 0.33	1.67			
	Advocate how the medicinal cup works and provide follow-up support	Complexity	Awareness of the medicinal cups existence, function and value is low		0.78 1	1.78			
Strategies in step 2		Factor	Challenges addressed	Comment	Importance of each challenge calculated in one study	Impact = sum of importance	Factor	Sum Impact	Impact = sum/2
Strategies in step 2	Target all outlets in Kampala	Not applicable	Lack of availability of medicinal cups and value is low	Concerns availability	-	-	Relative Advantage	2.12	0.18
	Target university students and friend networks	Communication	Suspicion due to new and foreign product No common sharing between different actors is		0.78 1	1.78	Compatibility	1.44	0.12
	Collect and share information	Not applicable	Lack of availability of medicinal cups Uncertainties related to the import process may	Concerns availability	-	-	Complexity	0	0
	Partner with semi-private organization to reach beyond Kampala	Not applicable	and value is low		-	-	Communication	3.89	0.32
	Customized marketing to identified segments	Communication	Suspicion due to new and foreign product Cultural diversity requires customized marketing Tobacco subject hinders word-of-mouth effect		0.78 0.11 0.22	2.11	Observability	0	0
	Implement partial payment model	Relative Advantage	Concerns price is unaffordable to many are used	Concerns availability	-	-	Trialability	0	0
	Formalize order processes with Kinyo Cup	Not applicable	Information sharing between different actors is		0.78 0.56	1.44			
	Involve influential leaders to advocate on the issue of urgency	Compatibility	Suspicion due to new and foreign product Suspicion due to vaginal insertion		0.78 0.56	1.44			
	Implement donation programs	Relative Advantage	Current prices unaffordable to many		0.78	0.78			
Strategies in step 3		Factor	Challenges addressed	Comment	Importance of each challenge calculated in one study	Impact = sum of importance	Factor	Sum Impact	Impact = sum/2
Strategies in step 3	National Marketing	Communication	and value is low Tobacco subject hinders word-of-mouth effect Lack of availability of medicinal cups		0.22 1	1.22	Relative Advantage	0	0
	Set up hubs in Kibale, Wankole, Jima and Mbole	Not applicable	Poor infrastructure to reach rural areas are used	Concerns availability	-	-	Compatibility	0	0
	Use collected data to implement better forecasting and marketing strategies	Not applicable	Information sharing between different actors is Poor infrastructure to reach rural areas	Concerns availability	-	-	Complexity	0	0
	Reinvestigate micro-entrepreneurs for last-mile distribution	Not applicable	Lack of availability of medicinal cups	Concerns availability	-	-	Communication	1.22	0.10
					-	-	Observability	0	0
							Trialability	0	0

## 8.7 Calculation of Improved Demand according to Three-Step Framework

Step 1				
	Importance of each factor	Impact of strategies suggested in three-step framework	Importance*Impact	Importance*Impact/36
Relative advantage	5,3	1,94	10,28	0,29
Communication	4,5	4,23	19,04	0,53
Observability	3,8	0	0	0,00
Complexity	2,5	1,78	4,45	0,12
Compatibility	3,5	1,88	6,58	0,18
Trialability	1,5	0	0	0,00
			Improved Demand:	1,12
Step 2				
	Importance of each factor	Impact of strategies suggested in three-step framework	Importance*Impact	Importance*Impact/36
Relative advantage	5,3	2,12	11,236	0,31
Communication	4,5	3,89	17,505	0,49
Observability	3,8	0	0	0
Complexity	2,5	0	0	0
Compatibility	3,5	1,44	5,04	0,14
Trialability	1,5	0	0	0
			Improved Demand:	0,94
Step 3				
	Importance of each factor	Impact of strategies suggested in three-step framework	Importance*Impact	Importance*Impact/36
Relative advantage	5,3	0	0	0
Communication	4,5	1,22	5,49	0,15
Observability	3,8	0	0	0
Complexity	2,5	0	0	0
Compatibility	3,5	0	0	0
Trialability	1,5	0	0	0
			Improved Demand:	0,15