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Product Design and Its Role in Improving the Daily Lives of Poverty-Stricken Societies

Wan Ardini Binti Wan Edrin
1191102256@student.mmu.edu.my
Multimedia University, Malaysia
ORCID iD: 0009-0004-5595-5661
(Corresponding Author)

Nur Hatice Zaim
1201301880@student.mmu.edu.my
Multimedia University, Malaysia
ORCID iD: 0009-0002-1607-2669

Abstract

This article examines the role of product design in improving the lives of individuals from poverty-stricken societies. Despite the perception of well-designed products being a privilege, it is essential to recognize the universal need for functional and purposeful products. As issues related to climate change and economic recession disproportionately affect lower-income communities, creative problem-solving can become an effective way to support them in overcoming these issues. Issues ranging from water scarcity to underdeveloped agriculture systems have been addressed through the introduction of new products into underprivileged communities. The impact of these products is evaluated based on user feedback and their effectiveness in improving users' lives. The outcome will identify the significance of the role of product design in improving the livelihood of poverty-stricken societies. This will benefit governmental and non-governmental organisations seeking effective solutions to support individuals in need and product designers who are interested in designing for humanitarian purposes. By highlighting successful instances where product design has positively impacted the lives of impoverished individuals, these organisations may be more inclined to collaborate with designers and provide the necessary funding for such initiatives.

Keywords Poverty-stricken societies; Product design; Humanitarian design.
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Introduction

The global impacts of climate change are not uniform (UN, 2016). According to the United Nations, certain populations and those with lower socioeconomic standing have been more negatively impacted than others, causing unique issues that require creative problem-solving. Design thinking is a method that could solve problems and produce life-changing products and services (Johnson, 2020), however, functionally intuitive designed products are often seen as a sign of privilege. It is important to remember that everyone deserves and needs products that function purposefully.

Creating accessible products that meet the needs of socioeconomically marginalised communities has the potential to improve social and human development (Jagtap, 2019). These products could lead to the betterment of a society's physical and mental well-being and its economy. This article will explore the ways that product design can contribute and has contributed to the livelihood of people who are part of poverty-stricken societies and how well those products function in their intended environment.

Issues Faced by Poverty-Stricken Societies

Poverty is a global struggle. Rahnema (1991) argued in his work "Global Poverty: A Pauperizing Myth" that the basis for various understandings of poverty stems from the lack of specific components that are seen as markers of poverty. These absences take the form of inadequacies or deprivations, whether they are material or existential and intangible. The list of material factors can include things like prejudice, injustice, oppression, lack of rights, lack of basic resources for one's biological or economic survival as defined by one's culture, and other types of physiological deprivations like hunger, malnutrition, homelessness, health problems, and being denied an education.

Through a human-centred approach, design thinking leads to innovations that are above aesthetic values (Brown, 2008), resulting in the design of products that can support these socioeconomically marginalised populations. Product design provides a way to help these people with issues that are specific to them. Examples of such human-centred innovations include smokeless cookstoves, products that help generate income, medical devices, educational devices, communication products, or any other products that encourage the development of people who are lacking in resources and help them improve their skills (Jagtap, 2019).

Throughout the years there has been an increase in issues that have led to difficulties in the lives of people with low income. The increasing severity of climate change and environmental issues has impacted the people in poverty negatively the most. Climate change has extreme effects on the whole world, however, the people who are affected by it most are the people living at the bottom of

the pyramid. Table 1 provides a comparison of the relationship between multidimensional poverty and climate change vulnerability, illustrating how climate change disproportionately impacts impoverished communities. One study has found a positive correlation between the multidimensional poverty index which covers the three dimensions of poverty (monetary, education and basic infrastructure services) with the climate change vulnerability indices which locate the areas most affected by climate change (Rana et al., 2023).

Table 1. Relationship between multidimensional poverty and climate change vulnerability (Rana et al., 2023)

Indices	Livelihood Vulnerability Index	IPCC Climate Vulnerability Index
Multidimensional Poverty Index	0.125∗∗	0.232∗

Furthermore, economic fluctuations make it harder for people to get a hold of the situation, leaving them unable to afford the basic necessities needed for survival. Alongside the lack of the availability of financial services, the cycle of poverty traps individuals leading to an increase in the inequality gap that needs to be restored for a more sustainable world (Kandpal, 2020). The economic recession acts as a catalyst for the growing negative impacts of climate change on socio-economically marginalised populations.

The design process for humanitarian purposes requires defining the problems as the first step in solving them (Vedrin & Hadrin, 2016). Understanding the complications that arise in the lives of people in poverty and how it affects their health and livelihood is crucial to solving it.

Product Design Process

The design process can be more accurately characterised as a network of interconnected areas, rather than a rigid sequence of predetermined processes (Brown, 2008). The process of designing a product is extensive as it involves several different stages to ensure the product functions the way that is best for the user. The process eventually requires the completion of three stages: inspiration, ideation, and integration. Identifying the problem is often the first step taken by designers before designing; by understanding the issue, goals, and objectives, the designer would be set to achieve the solution. The process that subsequently follows for product designing would include market research, idea generation, concept development, prototyping, and usability testing (Rogers et al., 2023). They are all essential steps in creating a successful, functioning product.

Knowing the user's needs and wants will help the designer create a better product, and getting feedback from them throughout the process will produce the most satisfactory outcome (Kujala, 2003). Participatory design is a way in which the product design process involves the user and

researchers in a collaborative environment where information on how to improve the product is acquired (Jamal & Kapoor, 2022). Analysing the user experience is key in the designing process of a product, it encourages critical thinking and innovation (Lester & Piore, 2004) especially when it comes to designing for impoverished individuals. Designing for issues faced by the underprivileged without studying the perspective of the user may lead to solutionism instead of solving the real societal issue (Johnson, 2020). A product can only increase in effectiveness through this process.

The user feedback will be most beneficial when they have interacted with a prototype of the product. Prototyping is a process that allows the designer to figure out the difficulties of the product visually and physically. The designers and users can interact with a model of a version of the product and encounter the issues that people would face by using the product first-hand. Designers will then be able to refine the usability issues that the product may have before creating high-fidelity prototypes (Wang et al., 2022). Testing the product in its intended environment is also crucial in identifying any factors that may affect its usability, when context is overlooked, issues will arise and disrupt the user experience which may be detrimental in a resource-poor society.

Problem Statement

The state of the economy and the increasing rate at which climate change is occurring create a society that suffers every day to meet basic human needs. People in poverty-stricken societies live their lives without having enough funds to spend on the basic necessities let alone the additional luxuries that have now become the standard household items.

Different types of products have been designed specifically for people in poverty-stricken societies who are dealing with life-threatening issues every day. Overheating during the commute to work or school, having limited access to clean, drinkable water or even any water at all, and not being able to work full time due to the unfavourable outdoor conditions are only a few of the struggles that people on the lower end of the financial spectrum suffer from. By analysing the issues, where it stems from and what are the main pressure points that need support, designers will understand the user and the problem better, leading to a better understanding of the functionalities that they need to focus on to maximise the efficiency of their product (Whitehead et al., 2019).

There has been a disproportionate incline in the need for humanitarian design compared to the design knowledge available for and with marginalised people (Corsini et al., 2022), designers should continue to grow and develop further in the product design industry specifically in the humanitarian design sector which is underdeveloped and has grown stagnant over the years. This slow growth however is not for the lack of interest but instead the lack of experience (Austin-Breneman & Yang,

2013). There has been a lack of public knowledge regarding the effectiveness of products created to help people who are struggling with poverty. Products that are designed specifically to cater to the issues faced by the less fortunate have the capability to change their lives for the better (Jagtap, 2019). By tackling issues that they struggle with every day, daily tasks become bearable. Therefore, it is crucial to research the different ways in which product design can support these societies so that we can continuously learn and develop our ideas and inventions further.

Product design may appear to be irrelevant to the solution of problems that are faced by the low-income society, however, there is a huge market in which product development can occur that would support them in their everyday lives. The issues that plague the people in poverty vary from lack of daily necessities such as difficulty accessing clean water to daily work difficulties such as extremely hot days for outdoor workers. Creative problem-solving is a great asset in supporting the low-income community as seen in the case studies of products that have been designed for maximum efficiency to tackle the problems that weigh heavily on them.

Method

The research paradigm surrounding the topic of product design for humanitarian purposes is viewed as an area that has a lot of potential to support people of low-income society in a focused and practical way. Products that are designed to solve the specific issues faced by people living in poverty may have varying origins. There are three main sources that initiate product design for the development of the low-income community. One of them is through the public service responsibility from the government that would provide useful material for lower-class families. NGOs are also key initiators in product design aimed at aiding low-income communities. Finally, some companies focus on building up the community by providing them with useful resources.

The study adopts a qualitative review approach, analysing data from case studies, documents, and ethnographic reports. Qualitative data is information surrounding experiences and opinions, this is collected through documents, case studies and ethnography to name a few (Taylor-Powell et al., 2003). Since the research looks at the process and impact of the products, qualitative data allows for a broader understanding of the factors that may influence the process of designing the product as well as the positive, negative, or neutral impact of the product. However, there are some uses of quantitative data such as in measuring the success rates of the products in terms of how many products were used or sold and the financial difference between before and after using the product. The research cannot be solely conducted using qualitative data as it uses numerical data and statistics for a conclusive review.

The reason why this research is being carried out is to identify how these product designs specifically help the low-income population. The research offers a review of case studies that explain the process and results of designing products for poverty-stricken societies. The research focuses on secondary data collected on a global scale without a regional restriction due to the lack of information surrounding products designed to help the local poverty-stricken societies within Southeast Asia.

In this article, several different pieces of literature are collected to be analysed for information regarding the challenges encountered by impoverished communities as well as products that are designed to support them in dealing with these issues. Relevant websites will also be used to collect data regarding the products that have been designed for the purpose stated previously. Other methods of secondary data collection include visual data such as educational videos and documentaries concerning the recurring issues surrounding socio-economically marginalised communities and the product design process. No surveys will be carried out for this research as primary research is unattainable with the time limitation that is applied while conducting this research.

Analysis and Findings

The research offers an in-depth analysis of three different products that were created for the humanitarian purpose of supporting poverty-stricken societies. These societies analysed in this article are mainly found in underdeveloped or developing countries. Each of the products focuses on supporting societies categorised in rural poverty; this type of poverty is usually a result of inaccessibility to essential services and opportunities (Richmond Vale Academy, 2022). The analysis includes an evaluation of similarities between the products which aims to aid in the identification of the most efficient way of designing products that could alleviate the struggles surrounding the issues involving climate change and financial insecurity within a poverty-stricken society.

Product 1: Q-Drum & Hippo Roller

The cylindrical rollable container that is used to transport water is one of the most innovative product designs that have been produced to support people living in regions with limited access to clean water. The issue that this product aims to support is the water scarcity issue that is often faced by people living in underdeveloped and developing countries, specifically areas with high water vulnerability. A report by the World Health Organisation (WHO) in 2017 found that 2.1 billion people lack safe drinking water at home. Water is needed for hydration and hygiene every day, but also as part of their job (farming, construction, cleaning etc.). This issue has been elevated due to climate change, the rising temperatures causing elongated periods of drought means that they might need to travel farther to get access to water.

Figure 1. Children Using the Hippo Roller (hipporoller.org, 2024).

The rollable container was first introduced in 1991 and since then it has been a constant in many rural communities. The concept of the Hippo Roller, and following in its footsteps, the Q-Drum is that it has a simple design that uses economical materials. This design has been a game changer for transporting water in rural areas, it can carry five times more water than the average bucket (CGTN, 2016). As described in the official Q-Drum website, the product uses the concept of a wheelbarrow but is made specifically to carry water to minimise any wastage of water. Its cylinder shape has been designed to make it easy to transport through the method of rolling it on the ground as it acts as a wheel and as water storage. Both methods of pushing and pulling are functional. Although it may not be the most ergonomic design, other factors such as cost need to be considered.

The product has one purpose which is to transport water from one location to another, a task that they have been struggling with due to the lack of financial resources in the community to provide running water. This correlates with the climate change issues that have worsened the conditions (Rana et al., 2023) in which they need to trek to reach the water source. Q-Drum and Hippo Roller's rollable container allows people to complete the task of collecting water in a shorter amount of time and do more activities within a day. They could spend more of their time doing jobs that could possibly increase their income and children could spend more time at school, this is one of the main objectives of this product as stated by Hippo Roller's Executive Director, Grant Gibbs. These would benefit the community greatly as they could become more financially stable, grow their economy, and develop their skills and over time reduce the inequality gap between the higher and lower classes.

Product 2: Lifestraw

LifeStraw has been developing products for 29 years and has produced various types of water-purifying products that are being used to this day. The need for the product was found due to the

increase in illnesses due to waterborne diseases. People in poverty do not have access to clean water and healthcare facilities and it becomes a continuous cycle as they do not have the financial resources to escape this lifestyle, especially in rural areas.

LifeStraw products rely heavily on their water purification technology as that is the main function of their product. The company's purpose is to give access to safe drinking water to everyone, especially to those who need it. Over the years they have expanded their range of products to outdoors, camping and home items along with their collection of humanitarian products.

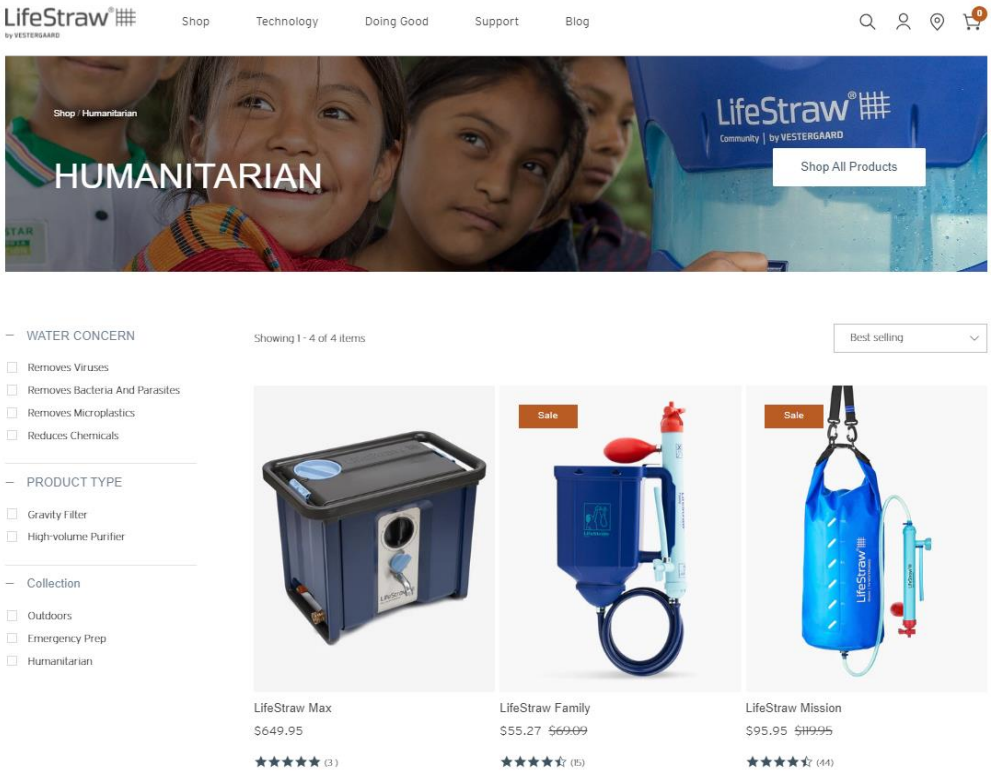
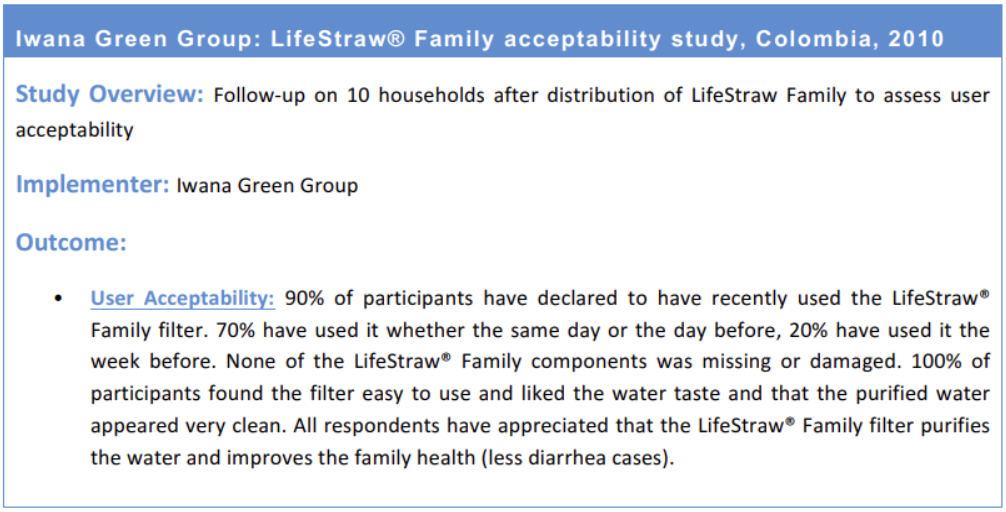


Figure 2. Humanitarian Collection Found on the LifeStraw Website.

The majority of their products are donated and distributed to socio-economically marginalised communities through non-profit organisations such as The Carter Centre. They are otherwise highly inaccessible to people living in poverty as the cost of LifeStraw humanitarian products ranges from $69.09 to $649.95 and that does not include the fees of transporting the products to the needed areas.

Through LifeStraw's programmes, 3,316,672 people were given access to clean drinking water in 2022. They have also conducted user acceptability studies on their products to get a better understanding of the users' long-term response towards their products. Based on the study on one of their products, LifeStraw Family, the majority of the people who used the product are satisfied with the results and are continuously using it.



Iwana Green Group: LifeStraw® Family acceptability study, Colombia, 2010

Study Overview: Follow-up on 10 households after distribution of LifeStraw Family to assess user acceptability

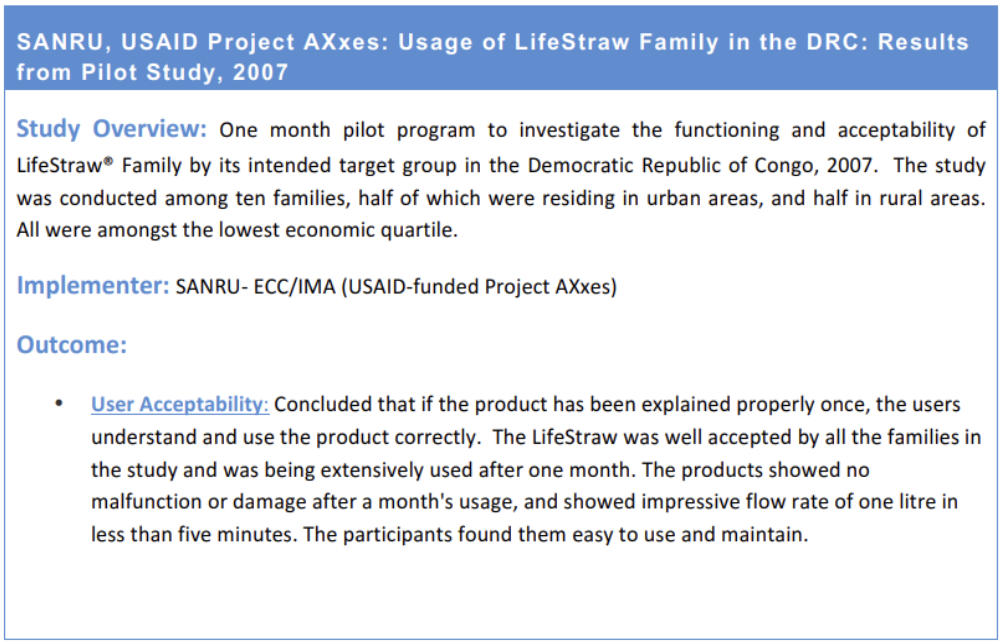
Implementer: Iwana Green Group

Outcome:

- User Acceptability: 90% of participants have declared to have recently used the LifeStraw® Family filter. 70% have used it whether the same day or the day before, 20% have used it the week before. None of the LifeStraw® Family components was missing or damaged. 100% of participants found the filter easy to use and liked the water taste and that the purified water appeared very clean. All respondents have appreciated that the LifeStraw® Family filter purifies the water and improves the family health (less diarrhea cases).

Figure 3. Excerpt from Evidence Dossier for LifeStraw Family 1.0 and LifeStraw Mission.

As may be expected from a product that has built-in systems, there has to be a learning period for the users. The results of the conducted study suggest that after one demonstration of the product usage, they can understand how to use the product without any issues which is a sign of a successful product.



SANRU, USAID Project AXxes: Usage of LifeStraw Family in the DRC: Results from Pilot Study, 2007

Study Overview: One month pilot program to investigate the functioning and acceptability of LifeStraw® Family by its intended target group in the Democratic Republic of Congo, 2007. The study was conducted among ten families, half of which were residing in urban areas, and half in rural areas. All were amongst the lowest economic quartile.

Implementer: SANRU- ECC/IMA (USAID-funded Project AXxes)

Outcome:

- User Acceptability: Concluded that if the product has been explained properly once, the users understand and use the product correctly. The LifeStraw was well accepted by all the families in the study and was being extensively used after one month. The products showed no malfunction or damage after a month's usage, and showed impressive flow rate of one litre in less than five minutes. The participants found them easy to use and maintain.

Figure 4. Excerpt from Evidence Dossier for LifeStraw Family 1.0 and LifeStraw Mission.

Product 3: Proximity

Proximity is a revolutionary company that focuses on helping the local community of Myanmar who depend on agriculture as their livelihood by providing them with affordable products that could increase their income. Their goal has been to provide a trusted company within the farming

community in Myanmar that would help the growth of their farm and business in a sustainable way. According to Proximity, many of them are struggling to maintain their farm as a consequence of unreliable weather that is caused by climate change and not being able to afford to maintain a farm due to financial issues. The farmers in Myanmar have been behind in the technological leaps in agriculture that have been happening around the world and Proximity provides them with products that can help them in scaling up in the context of their environment.

The design process of Proximity involves a lot of consideration towards the efficiency of their product as well as the economic value that it holds. As told on the Proximity website, the founders of the company began their journey in America only to realise that they would never truly understand the issue unless they were living among the people who need their service. Proximity Designs prioritised working side by side with the farmers in Myanmar to ensure that their products are meeting the needs of their customers.

Human-centred design is a key aspect of Proximity's design process, this involves observing, interacting, and conversing with the people (Aung Din, 2012). They believe that empathy is needed for effective products and that includes co-designing with the farmers they intend to help. The products go through a quality check in the field of real farmers where the designers receive constructive feedback which helps improve their products before mass producing them.

Figure 5. Sturdy Boy Water Tank in Use.

Proximity products have reached 75% of the farming population in Myanmar as stated in their website. Proximity highlights that their product has a long-term benefit in supporting the low-income community where the farmers who use their product and services will see its effects over time through the harvest yield and an increase in revenue annually. Based on the statistics offered on the company's official website, the annual median income increase is $250 per customer and 112,617 users are actively using the product.

Product Effectiveness for The Poverty-Stricken Societies

The effectiveness of the products will be evaluated based on factors such as the ease of usage, longevity of usage and the impact it leaves on the community. Along with that, the design and manufacturing process will also be considered.

Table 2. Product case studies comparison.

	Q-Drum/Hippo Roller	LifeStraw	Proximity
Function	An improved method of transporting water from one place to another for rural communities.	A water filtration system that can filter out bacteria, parasites and any other contaminants to produce clean, drinkable water.	Farming equipment that is thoughtfully designed to help farmers farm more efficiently.
The issue it is addressing	Water scarcity caused by areas being underdeveloped and disruptive weather conditions such as drought due to climate change.	Limited access to clean water due to water contamination and water scarcity caused by pollution and climate change.	Financial issues of not being able to afford equipment and not being able to generate sufficient income through agriculture.
Analysis	Although it is a simple product it has proven to leave a big impact. It explicitly helps lift the burden off the heads of people carrying the water and indirectly ensures that people have the time to go to school and work. It has a positive long-term effect.	A complex product made easy for people who need it. This product is a life-changer for communities that would otherwise be plagued with waterborne diseases. Also ensures long-term access to clean water is available.	An initiative that may not seem impactful but has shown a significant result in making a change in the low-income society of Myanmar. Designed for long-term progression towards financial gain.

Based on the table comparison of the selected case studies, it is evident that the effectiveness may vary depending on the different product availability and method of production. There are a few things that need to be considered when designing products for poverty-stricken societies. The design of the product, the materials, and the manufacturing method are some of the things that contribute to the functionality and effectiveness of the product.

The selection of materials significantly influences the cost and haptic experience of the product; controlling the cost is a crucial factor when designing a product for impoverished individuals. Therefore, there should be careful consideration supported by research when choosing the materials for the product. The prototyping stage of the design process would allow the designers to make sure that the material is suitable for the product based on functionality and cost. Another factor

that could affect the cost would be the method of manufacturing, opting for certain methods could reduce the overall cost, and choosing local manufacturers also eliminates the need for import fees. This issue can be found in the manufacturing for Hippo Roller, as they are exporting from South Africa, they have a higher landed cost when expanding to other regions.

As seen through Proximity's design process, the participatory design which was mentioned previously can be deemed as an effective method of creating successful products based on the data collected by the company. Context is an aspect of product design that should not be overlooked and should be a standard practice; in the realm of design for the low-income society this is especially critical as there should be a thorough understanding of the issue before beginning to design the products (Johnson, 2020). Co-designing with the end-users may bring about a perspective that people who are not part of the low-income society may not see (Kujala, 2003).

The ease of use is an important aspect when it comes to the effectiveness of the product. If the user does not know how to use and maintain it, then the product has failed. When there is technology incorporated into the functionality of the product, it should be simple enough to be understood by its user. This is a sign of a successful product as it considers Jakob Nielson's usability heuristics such as match between system and real world and error prevention. Otherwise, there should be a transition period in which the product is introduced to the community and there should be communication between the company and the user to support any issues they encounter.

A product designed for people who are struggling with issues that can affect their life negatively should always consider the longevity of the product and its long-term impact on its user. Since the user would be dependent on the product, it should be durable and reliable as any defects may lead to accidents, illnesses, or loss of money. Building trust between the product and the user is a good indicator of an effective product.

Overall, the three products that were analysed are effective in supporting the low-income society in their daily life. Each product tackles a different struggle but the impact that is left through the usage of the product is similar as their end goal is the same. That is to bring positive change to society by easing the obstacles that are brought by being in poverty and emphasised through the effects of climate change and the financial crisis.

Discussion

The results of this study highlight the significant influence that products tailored for poverty-stricken societies have had in effectively addressing the various difficulties they face daily. It can be said that

although the product may focus on solving one specific issue, the impact of using the product extends throughout multiple aspects of the user's life. Using the rollable water container as an example, at a surface level it tackles the issue of the struggle of transporting water, but circumstantially it also leads to better health and hygiene and opens the opportunity for the user to be able to get to work and school sooner. As a result, they are acquiring more income and knowledge that may improve their chances of having a better future.

Concerning the creation of the product, after analysing the way in which the product is created and what is involved in the process of making the product in the context of a company, it is clear that although product design is an important part of the process several other departments are involved to make the product a success. Product designers must work hand in hand with engineers, scientists, project managers and more to build a fully functional product. Each department plays a part in bringing the product to life, the role of product design is to ensure that the interface of the product is suitable for its function through comprehensive research, user testing, and prototyping. Product development is essential to produce the best outcome, and this would not be possible without product design.

The products analysed in this article have highlighted particular factors that need to be considered when designing for low-income societies. The affordability of the product is a huge factor that affects the final materials and manufacturing decisions. The usability of the product should not be sacrificed due to this factor, a well-made, fully functioning product would be more cost-effective in the long run as replacements would not be needed as often. People who are dealing with these issues firsthand would depend on the product, the increased reliability factor should be considered while designing the product as this may predict the impact the product may have on the users.

When it comes to the impact of including people with first-hand experience with the issues the product is trying to solve, the involvement of the end-users in the process may vary. Overall, the origins of the products do come from the observation of the issue. Some companies lack evidence that the design process involved people struggling with the effects of climate change or financial instability. However, some companies are proud to share their achievements and contributions to society. Sharing what has been effective in the design process of existing products may lead to the development of more innovative products. Empathy is key in the section of the industry where humanitarian support is its focus, and it will ultimately pave the way for a more inclusive and equitable future.

Contribution And Implication

This research has the potential to provide valuable insights to product designers, engineers, and humanitarian groups worldwide, enabling them to get a comprehensive knowledge of the most efficient approach for producing items aimed at assisting low-income communities. Certain criteria are specifically considered for products for people in poverty. Learning from pre-existing products that have similar end goals would bring a clearer understanding of the project that they may be embarking on. By putting these into practice there could be a higher success rate in product development for humanitarian purposes.

Additionally, this research would hopefully put into perspective the importance of supporting poverty-stricken societies and bring awareness to the disparity between the higher and lower classes when it comes to the negative effects of climate change and financial recession. This study demonstrates that even seemingly negligible issues must be addressed since they have the potential to initiate a cascade of beneficial outcomes if resolved. Product design is one way of being able to develop ideas to help impoverished individuals and through informing people about what is possible it may inspire other solutions in other fields to bring about change in the world.

Limitations

Obtaining documentation on the product design process for the case studies proved to be challenging. Due to the nature of companies not sharing detailed information regarding the creation of their products, specifically the design process, it limits the discussion that could be had about any unique aspects of the design process that could help differentiate the success of one product from another. Some of the design processes could be assumed as there are standard practices that are mentioned briefly. Comprehensive literature and resources were scarce on products specifically designed for humanitarian objectives.

It would be recommended to conduct separate research regarding the issues and their effect on the people who are at the lower end of the financial spectrum before going into this research. Some layers should be understood in depth about the difficulties that they face before looking at how product design could contribute to it. A basic understanding of it may lead to an oversimplified view of the issue and produce flawed research.

Conclusion

It has been established that product design can empower individuals from poverty-stricken societies by addressing their daily struggles and helping them find a solution for them. The findings highlight

the positive impact of well-designed products on various aspects of users' lives. The study emphasises the importance of collaboration between different departments within companies to ensure the success of product development. The affordability, usability, and reliability of products are crucial factors in designing for low-income communities. Involving end-users in the design process and sharing effective design strategies can lead to the development of more innovative products. The research contributes to the understanding of effective product design for humanitarian purposes and raises awareness of the need to address the effects of climate change and financial recession on low-income communities. However, limitations in accessing detailed information about the design process and the lack of comprehensive research on solutions for these communities exist. Further studies involving interviews with designers and users, as well as exploring the development of socially responsible organisations, would provide deeper insights. Additionally, investigating the relationship between water and low-income societies could uncover solutions to related issues.

Studying the products and the journey of creating them, which are designed for the purpose of supporting resource-poor societies with issues affecting their daily life, have been essential in highlighting the criteria of a successful and effective product. Considering factors such as the design process, materials, and manufacturing, stimulates improvements in the effectiveness of products for the impoverished, leading to improved usability and a positive impact on the daily lives of individuals in need. The designs are thoughtfully produced to ensure maximum usability for its users and the impact that it leaves on people who are experiencing these unfortunate issues makes it clear that every piece of support can help alleviate the struggles that they are facing every day. Supporting one aspect of their daily life may create a domino effect in which several other changes occur towards improving their way of living.

Further Studies

This topic of research could be expanded on a larger scale by involving practising industrial/product designers who are willing to share their design process from beginning to end. A thorough interview with the product designers, as well as product users of the product, would bring more depth to this research and provide nuanced insights on how product design could be beneficial in supporting the low-income society. In this research, the origins of the product and company are discussed, however, it would be a more elaborate research if the development and growth of the company were explored in more detail.

In that same realm, a study regarding the companies or organisations that are developed with the purpose of social responsibility could be a beneficial study. Analysing the relationship between entrepreneurship and helping people in need can lead to interesting findings as solving the problem

and possibly removing the need for the product would ultimately lead to a doomed business and creating a product that leads to permanent reliance to benefit the business would lead to ethics of the concept.

A pattern that can be found in the products and issues discussed in this paper is that they are all related to water, transporting water, cleaning water and water management in agriculture. Another research unrelated to design could be conducted to understand the relationship between water and low-income society and the solutions that are available to solve these issues.

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Authors' Bio

Wan Ardini Binti Wan Edrin is a product design student at Multimedia University, Malaysia, with a passion for art and design. Her work focuses on exploring how design can contribute positively to societal issues, particularly in addressing the challenges faced by impoverished communities.

Nur Hatice Zaim, an advertising design student from Istanbul, Turkey, is currently studying at Multimedia University, Malaysia. She integrates her Malay and Turkish heritage to infuse creativity into her work, aiming to develop culturally diverse and impactful design solutions that resonate with global audiences.