Crowdsourcing Tools for Worker and Brand Dialog
Case studies on a new media game changer

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Abstract

Globalization has made it possible to source products like clothes and footwear from all over the world. Complex supply chains have made it difficult to know what is really going on in factories, especially in developing countries set far away from the brands themselves. However, the world is drawn closer together with the emergence of new media technology such as the Web 2.0, social media, and mobile internet. This new media technology is becoming accessible for people all over the world. With the emergence of this new technology, crowdsourcing has developed as a method to gather the voices of the people for various projects. Crowdsourcing has previously been researched as methods for businesses to gain ideas for innovations, NGOs for social developments, and for governments to develop policies. This research focuses on three cases of crowdsourcing that has not yet been researched.

A multiple-case study has been conducted of the three crowdsourcing tools provided by QuizRR, LaborVoices and Better Factories Cambodia's project Outstanding Worker. In-depth interviews, product demonstrations, articles, video clips and reports were analyzed. These three cases represent how crowdsourcing can be used to gather the voices of factory workers, especially in developing countries. This study looks into how crowdsourcing can be used to increase the collective agency of workers by collecting information directly from workers, as a counter to existing monitoring practices like factory audits. The study focuses particularly on design of the tools, participation incentives, which issues are communicated and how the systems can make possible exploitation of workers visible.

The three cases differ in the mentioned aspects. However, the findings suggest that firstly, sharing information with workers so that they can use this information to solve local problems themselves is central to increase the collective agency of workers. Further, the findings suggest that design, transparency, meaning how the collected data is used, influences the tools' ability to empower workers and improve working conditions. This study presents a model of the main elements which represent the dynamics in crowdsourcing tools for worker-brand dialog. While the model's elements suggest how crowdsourcing can be used to give workers a voice and create dialog, it is argued that a communication tool cannot alone solve issues of exploitation. Rather, new communication methods like these are reliant on functioning enforcement mechanisms such as local labor laws, and regulations for ethical production.

Keywords: *Crowdsourcing, outsourced labor, new media technology, ethical production, transparency, technology for change.*

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List of abbreviations

BFC	Better Factories Cambodia
CSR	Corporate social responsibility
ETI	Ethical Trading Initiative
ILO	International Labour Organization
IVR	Interactive Voice Response

1. Introduction

Workers have organized themselves in unions to stand against exploitation for decades (Bair & Parpacuer 2012; Nash, 2010; Tosstorff, 2005). They have been fighting for their rights against powerful corporations to ensure fair payment and end child labor and discrimination (Nash, 2010). Economic globalization and digital communication have made companies transnational (Nash, 2010). An opportunity for exploitation has been created as production is moved to far-away places where labor is cheap and workers can be kept long hours on the factory floor (Delaney & Connor, 2016). Decentralization and outsourced production have created possibilities for less responsibility. Corporations source from factories where subcontractors hire workers on a short-term basis (Delaney & Connor, 2016). The workers have become invisible, both to the corporations they produce for, and to us, the consumers. We buy our cheap cotton t-shirts that says "made in Bangladesh" without further thought.

Social media has opened the possibility to spread stories worldwide with much ease. Stories about terrible working conditions can go viral in no time. The workers are in the limelight as the stories spread (Reinecke & Donaghey, 2015). A note from a worker with a cry for help is sown into a pair of trousers at Primark (Brown, 2014). A building collapses in Dhaka, killing over 1000 retail factory workers (Reinecke & Donaghey, 2015). Traditional media has publicly shamed corporations for being irresponsible, and demanded action. Campaigns and hashtags have flooded social media; people have held demonstrations outside H&M stores (H&M's Broken Promises, 2017; Reinecke & Donaghey, 2015). When such media attention occurs, corporations' reputations are at stake. They apologize and might claim that they 'are working on it' (H&M's Broken Promises, 2017), however, the response might just be part of their crisis communication strategy (Schultz, Utz &Göritz, 2011). The viral stories and media harassment of corporations are not systematic. They eventually blow over, and may not create long-term change. Social media often becomes another medium for corporate communication practitioners to monitor and to wave off reputational threats (Schultz, Utz & Göritz, 2011).

Further, the stories on factory workers are framed to attract readers, portraying the workers as victims of the retail industry, poor people with neither knowledge nor means to contribute to solving the situation. Bloggers from Norway have been sent to Cambodia to present to the world the poor people living and working in terrible conditions (Aftenposten, 2017). Journalists have named workers "fashion victims" (Lambers, 2014). The corporations might

be attacked and are expected to give an answer; however, workers are perceived as silent in their own struggle.

Organizations like International Labour Organzation (ILO) and International Trade Union Confederation work for marginalized workers' rights. They work to protect human rights like the right to join a union, be free from slavery, the right to a childhood and not be discriminated against (ILO, 2017). Still, human rights reports and country guides report bad working conditions, child labor and discrimination. The situation is clearly not solved (Danish Institute for Human Rights and CSR Centre Bangladesh, 2016; U.S Department of State, 2015).

Activists and scholars have put pressure on government officials to create corporate governance rules so that corporations must report on labor and environmental issues and not just financial information to shareholders and the public. In 2011, 23 countries had legislation that required companies to report on social and environmental issues. (Aaronson & Wham, 2016). However, reporting on corporate social responsibility (CSR) and public information on social and environmental standards have proved to not be enough. Aaronson and Wham (2016) claim that requirements for transparency do not create clear responsibilities for companies and that transparency does not automatically encourage responsibility.

The international corporations' manufacturing sites in developing countries are limiting labor unions' impact on creating social change. The corporations are investors which the countries are dependent on (Szirmai, 2012; Chen, 2003). Unions and others working for fairer conditions are held back when it comes to opposing management as it can disturb industrial peace and scare off the investors (Chen, 2003). However, the encouragement from governments through regulations to produce more ethically (Aaronson & Wham, 2016) opens the need for new tools to address the problem. For example, the UK Modern Slavery Act 2015, requires companies to report on their company websites on steps they take to hinder exploitation of workers. Crowdsourcing has in recent years surfaced as a promising tool to open the floor to the public and directly engage the affected groups to target problems and find solutions. The ability of a crowdsourcing tool to gather data, might be a way to improve supply chain intelligence, and also be a tool that can contribute to improving working conditions. By using these tools, workers can take active part in shaping the industry and their work places, at the same time as they become visible to brands and consumers.

1.1. Research questions and relevance

This study focuses on three crowdsourcing tools for corporate-worker dialogue. These are LaborVoices' tool Symphony, Better Factories Cambodia's (BFC) project Outstanding Worker and QuizRR's two digital training tools. They use different types of technology to reach factory workers and gather their voices and opinions. This information is shared with stakeholders like brands, NGOs, and the public. The crowdsourcing tools share information with workers that can be useful for them to improve their work life. The aim for this research is to find out if these tools can be a game changer in assisting corporations and workers to solve issues, by enabling dialogue between people high up in the corporations and workers on the bottom of the supply chain.

Despite crowdsourcing being a seemingly new term, much research has been conducted to define crowdsourcing, and to understand which situations it can be applied to and with what effects. Crowdsourcing as a term was introduced by Jeff Howe in 2006, and further research has been done to explore what crowdsourcing entails and what it can be applied to. There has been focus on creating a clear definition of the method crowdsourcing, exploring cases where crowdsourcing has been used, and effects of it. Brabham (2008), explored several cases to provide an introduction to this online model of knowledge gathering and problem solving. Online companies solely driven by crowdsourcing like Threadless.com and iStockphoto in addition to companies using crowdsourcing for projects, like Converse, where explored to show the possibilities in crowdsourcing presented by the web, like interactivity and participation. This aspect of crowdsourcing has further been researched by Scheitzer, Buchiner, Gassmann and Obrist (2012), finding that crowdsourcing can be used for innovation for businesses. One finding is that idea competitions through the Web 2.0 can lead to innovations that are low-cost and beneficial for companies. Further, it has been researched how crowdsourcing can be used in the cultural and entertainment sphere (Proctor, 2013; Jayakumar, 2016). The situations explored here was how crowdsourcing was used to create the Indian national anthem, and using crowdsourcing to create a more interactive relationship between the public and museums. There has also been shed light on how crowdsourcing can be used by non-profit organizations, finding that engaging the public can give access to valuable knowledge and innovation to solve social problems (Arrilaga-Andreessen, 2015). Scholars have also researched how crowdsourcing can be used in policymaking activities, from AIDS awareness to urban planning, and more (Prpic, Taeihagh & Melton, 2015; Hosio, Goncalves, Kostakos & Riekki, 2015; Hildebrand, Ahumada, Watson, 2013; Brabham, 2009).

Cases like Ushahidi, a crowdsourcing platform first developed for people to report violence after elections in Kenya, has been researched to create an understanding of how crowdsourcing platforms can be used to express the opinions and experiences of the people to the public (Wachanga, 2012). Overall, previous research has covered a great deal of cases where crowdsourcing has been used as a method to engage the public in businesses, organizations, and public policy. In addition, previous research sheds light on the different outcomes of crowdsourcing. For example, businesses gaining from creative ideas, nonprofits creating awareness in social issues, governments communicating with citizens and the people's voices being publicized through crowdsourcing platforms. However, there is a gap in research on how brands can use crowdsourcing to communicate with factory workers. In other words, how crowdsourcing can be used as a method for brands and workers, to possibly improve the information flow between the two parties. This study aims to shed light on how the crowdsourcing model can be implemented for brand and factory worker dialog, focusing on three cases that have not been researched in the past. Regarding social relevance, this study can be used as a point of reference for professionals working to find new ways to ensure ethical production and fair treatment of workers. In addition, this research can be useful to companies that seeks to understand what tools can be used to improve their communication throughout their supply chain. This research will also provide useful insight in how crowdsourcing tools might contribute to increase the collective agency of workers.

How can crowdsourcing tools increase the collective agency of workers? This is the main research question which will be answered by qualitatively researching QuizRR's two digital training tools, LaborVoices' Symphony service, and BFC's Outstanding Worker project, through a multiple-case study. The case study will be driven by four additional sub-questions. First, *how are the systems designed?* This will give insight to how crowdsourcing tools are designed to be available to factory workers, and how the messages are properly delivered to the management and relevant stakeholders. According to Greene and Mamic (2015), low literacy levels, basic phones without Internet and costs of service are some of the challenges the design of the systems must overcome. The next question this research will answer is: *How do the systems motivate people to participate*? This study will look into whether the tool or company communicates to the workers the benefits if they participate, give rewards or motivate in other ways. Greene and Mamic (2015) found that motivating workers to use these systems were challenging. This could be overcome by for example giving prizes for the participants or if the solution met the needs of the participant. The next question is: *What kind*

of issues are communicated through the tools? The issues the factory workers share are compared to issues reported by human rights organizations and might uncover both new topics or more satisfied workers. ILO's (2017) conventions will give guidelines on what is seen as the most pressing issues. The last question is: *How are crowdsourcing tools making visible possible exploitation of outsourced laborers?* Doorey (2005) argues that constant monitoring of supply chains is too difficult, while others (Chen, Zhang & Zhou, 2015) point to the insufficient monitoring practices that are commonly carried out. This study will discuss previous research on themes that are seen as relevant to understand the potential influence and capacity of the crowdsourcing tools. Further, the research design, collection of data and operationalization will be presented and discussed. The analysis will also critically assess and discuss the findings and present a conceptual model based on the findings in this study. Lastly, the conclusion will present the answer to the main research question and discuss future research and limitations.

2. Literature review

This section will present research seen as relevant to understand the possibilities of crowdsourcing tools for worker and brand dialogue. The selected research argues and discusses different takes on outsourced labor, globalization, new media and technology, crowdsourcing and transparency.

Previous research on phenomena like globalization, free trade and new media is included to build context to this study. According to research (Chen, Zhang & Zhou, 2015), one of the results of complexity brought on by moving production to far-away countries, and pressing the prices as low as possible, is exploitation of workers. The arguments from previous research creates a basis to understand what kind of issues workers are facing and what needs to be resolved. This can contribute to the answering of the sub-question what kind of issues are being communicated through the tools. History of labor unions, the International Labour Organization (ILO), and the current position of labor unions creates an understanding of the communities and the position of workers where these tools are implemented. This also contributes to the exploration of the abovementioned sub-question.

The monitoring of complex supply chains has been seen as difficult (Doorey, 2005), excusing that brands have little knowledge of the conditions in the many factories they source from. Audits have been the main way to check up on factories. However, workers are still being exploited and brands still seem to have little insight in their supply chains, so researchers are questioning the effectiveness of these audits (Greene & Mamic, 2015; Chen, Zhang & Zhou, 2015). This is relevant information when answering the sub-question on how crowdsourcing tools can make possible exploitation of workers visible. It also underlines the need for new research on alternative monitoring practices by using new media technology. Reports and research on mobile technology praise this technology as a tool that can make major positive societal and economic changes in developing countries (Vodafone Group Plc, 2013). Combining these findings with literature on crowdsourcing opens the possibility for crowdsourcing to serve as a method, and mobile technology as a tool. The research argues how crowdsourcing can let companies reach big crowds, and gather information or competence they wouldn't normally have access to (Estellés-Arolas & Gonzáles-Ladrón-de-Guevra, 2012). Previous and recent research on digital literacy and mobile usage in developing countries (Islam & Grönlund, 2011; Puspitasari &Ishii, 2016; Hilbert, 2011; Greene & Mamic, 2015) creates an understanding of design implications, motivations for use

and whether these crowdsourcing tools can be useful for the purpose of connecting with workers. Thus it contributes to answering the sub-questions on how the crowdsourcing tools in this study are designed, and the designs' implications, as well as how people are motivated to participate and use the systems.

2.1. Outsourced labor in complex supply chains

To increase the understanding of laborers and how workers have gathered to ensure fairer treatment, the International Labour Organization is a useful starting point. According to their websites, the advocacy for establishing an organization to deal with labor issues on an international scale, began in the 1800s (ILO, 2017). This was before companies started to outsource manufacturing to developing countries, which according to Szirmai (2012) started around 1950. The main focus when ILO was founded in 1919 was safety, politics, humanitarian issues and economic issues (ILO, 2017), not very different from what is main focus today. ILO has 8 fundamental conventions covering forced labor, child labor and minimum age, remuneration, discrimination, the right for workers to organize, and the right to collective bargaining. These conventions are representative for what kind of issues crowdsourcing tools might be able to detect, and are useful representations of the issues that are communicated through the studied crowdsourcing tools. However, it does give a broad description of most basic rights, which highlight the need to research exactly what is being communicated through crowdsourcing tools for worker and brand dialog.

The main task of ILO is to serve workers by creating collaborations with governments, employers and workers and set standards for working conditions. An important aspect of ILO is to enable dialog between these parties and to make sure they have an equal say when for example governments formulate new policies. So, ILO is an important mediator and initiator, while collection of data in an efficient matter can provide data to back their initiatives. ILO is seen as an important institution to increase enforcement of laws and regulations (Tosstorff, 2005). The founding of ILO in 1919 represented a new development in international relations (Tosstorff, 2005), a development brought on by the rise of globalization. Globalization, can according to Nash (2010), be defined as "increasing global interconnectedness" (p. 43). This includes the rise of transnational networks. One element these transnational networks represent, is the move of manufacturing operations to developing countries. This has been an engine for growth in developing countries (Szirmai, 2012), and China serves as a great example for how the manufacturing industry can boost a country's economy (Chen, 2013).

However, international trade and globalization also represent developments that has affected workers negatively. According to Chen (2013), workers' rights eroded with the increase of factories and production pressure in China. This represents a dilemma, where on one hand, increased interest from the outside world to move production to a cheaper country, in this case China, creates jobs and economic growth (Nash, 2010). On the other hand, workers' rights are violated in the constant pressure to produce more, cheaper and faster. Even though labor unions and organizations like ILO are representing and defending workers' rights, companies are still sourcing their products from these countries with either little willingness, or not efficient enough resources to ensure good working conditions in the factories they source from. Subcontracting is making it even more difficult to know exactly where and who is producing what. On top of this comes the informal economy which employs a high proportion of garment workers (ILO, 2017). The government has power to carry out certain legislations on production, however they must also consider the positive fueling of the economy (Chen, 2013). In addition, lack of resources makes it difficult to ensure that factories are complying with local labor laws. Local labor unions are left less able to object to rights abuses as it can disturb industrial peace, and scare investors. This again, might create social instability (Chen, 2013). So, the power of foreign companies and investors limits the unions' impact as they must adhere to the interests of capitalists. This problem underlines the need for alternatives to enable better representation of laborers, such as crowdsourcing tools.

There are positive and negative outcomes of outsourced labor, and it is important to differentiate between these. Outsourced labor is not a problem in itself, but there are problems that arise from the complexity of the supply chains, lack of law enforcement, production pressure, to mention some. Chen (2013) and Nash (2010) arguments show the relevance of finding solutions that can contribute to combat the problems. Research by Delaney and Connor (2016) is helpful to exemplify the seriousness and specter of violations that are happening in the footwear and garment industry. One of the prominent issues in the industry is forced labor. "Sumangali" (Delaney & Connor, 2016, p. 5) is a term used in Southern India, to describe women who are forced to work and have contracts for a period, and a big part of their wages are withheld until the contract is completed. This term is used interchangeably with the term "camp labour" (Delaney & Connor, 2016, p. 5) which is when workers live in controlled hostels. The hostels are controlled by the owner or factories, and the workers cannot move freely. This way, they can always be called in for work, they cannot organize or

go to find new employment. These workers have their freedom taken away from them, often combined with low pay, poor working conditions and other labor rights violations. On the positive side, women get the opportunity to work, however they are paid less, work longer hours and have no rights to organize in unions. Having these rights would have contributed to workers' collective agency and the possibility to seek justice (Delaney & Connor, 2016).

Understanding what type of issues workers are facing in different countries and different industries and communities is key to be able to create tools that work efficiently towards change. Companies that have production in the above-mentioned area in Southern India are H&M, Walmart, C&A, Inditex and Primark to mention a few (Delaney & Connor, 2016), but these brands have production in several other countries too, all with unique situations. This underlines the need for crowdsourcing tools to be designed to gather new information, for example like the open-ended message recordings done by BFC and LaborVoices. Having only surveys on a certain type of issues can mean that the crowdsourcing tool is unable to detect serious violations.

2.2. Monitoring and information disclosure

As established so far, companies today have global supply chains, with production spread to several countries and continents (Chen, Zhang & Zhou, 2015). For example, suppliers for Apple are producing in 30 different countries, while Nike has approximately 150 factories for shoes and 430 factories producing clothes. These suppliers are independent enterprises, and they are not owned by the brands they produce for. This in turn makes for example Nike less directly responsible for what is happening in the factories, as they are simply ordering products from an independent supplier. Nevertheless, when considering the huge effect this production has on the economies, brands have a lot of power. As argued in the beginning of this chapter – without foreign brands, the production scale would be considerably lower. In other words, foreign brands are not responsible for each supplier, but greatly affects the communities they source from. The power which the brands have to change communities, calls for effective solutions for brands to address social and environmental issues. The monitoring and regulation of the supply chains are done by governments, companies themselves (self-regulation) and NGOs. Some countries are holding brands responsible for their suppliers, like the UK Modern Slavery Act 2015 (Deloitte, 2016). Monitoring is usually done by auditors, sent to factories to check that conditions are decent. However, accidents like the Rana Plaza building collapse in 2013, and Nike's sweatshop scandal in the 1990s (Chen,

Zhang & Zhou, 2015) demonstrate that this type of monitoring is not enough. Problems still persist.

Doorey (2005) stresses that collecting information about suppliers' working conditions are costly, and that corporations find it difficult to track the production chain. On the other hand, Doorey (2005), argues that many corporations already keep track of suppliers when it comes to costs, quality and delivery, so keeping track of social conditions might not be such a burden. However, Doorey (2005) also argues that placing monitors in factories at all times can be impossible for companies with global supply chains. This issue points out the need to research and invent tools that can make this possible. Considering LaborVoices, QuizRR and BFC's tools and their ability to collect real-time information from factory workers, they represent low cost, easy and effective ways to track production chains. By using technology, brands might actually be able to monitor factories at all times. This links to the sub-question in this research, considering tool design. How are the systems designed? This research will discuss how the systems should be designed to best be able to gather real time information directly from workers. In addition, how to make the information collection more efficient, and make sure the information is reliable will be discussed.

A part of the question regarding how crowdsourcing tools can increase the collective agency of workers, is to explore what the data can be used for after being collected. Scandals like the Rana Plaza go public and can, as mentioned earlier, threaten a company's reputation. However, because of the scattered and complex supply chains, much information of poor conditions and human rights violations are not publicized (Chen, Zhang & Zhou, 2015). NGOs play an important role of monitoring global companies, as the issues are ongoing but hard to detect by consumers themselves (Chen, Zhang & Zhou, 2015). NGOs tackle this by using social media to build awareness among citizens. One example is the campaign H&M Broken Promises who reached over 1 million people online, started by Clean Clothes Campaign, International Labor Rights Forum and United Students Against Sweatshops (H&M's Broken Promises, 2017). This relates to the question of the crowdsourcing companies' role. Should LaborVoices, QuizRR and BFC use their data to act as external whistleblowers? As argued by Near and Miceli (1992), external whistleblowing is more effective than internal whistleblowing. Using the collected data from workers to publicly

shame brands might be an effective way to pressure brands into dealing with issues in their supply chains.

Doorey (2005) claims that there is a lack of transparency regarding corporations' operations, and that many corporations refuse to give out information about working conditions. Since companies have become transnational and source much of their products from developing countries, an important tool for improving working conditions can be information disclosure (Doorey, 2005). The article discusses different ways of regulating the way decentralized companies could report on their operations. Different types of information disclosure regulations can pressure companies to ensure better labor conditions in the countries they source from. Doorey (2005) emphasizes that the improvement of labor practices should aim to empower workers. The types of regulations presented by Doorey (2005) works towards making disclosure of business operations a part of doing good business, creating a climate where corporations voluntarily share information. This transparency will in turn be seen as positive by shareholders, consumers and other stakeholders. An example of this type of regulation is the UK Modern Slavery Act 2015 (Deloitte, 2016), requiring companies to disclose information on social conditions. The UK Modern Slavery Act does however not create a voluntary information sharing climate, but requires it, which in turn might be more efficient.

Yet, if the information is collected and shared by the corporations to the public and consumers, this might have negative outcomes for the workers. This is due to consumers' knowledge, or lack thereof, about foreign working conditions. Doorey's (2005) argument is that if raw information about working conditions are shared directly with consumers, they will not be in a position to know if the conditions are decent or not. If the information is shared without any context, then based on the consumers' knowledge they might respond by boycotting certain brands. The boycotting might in turn make corporations move to different factories or terminate contracts in certain places, making the workers lose their jobs. In this case, the worker is not empowered by the transparency (Doorey, 2005). Thus, making consumers and investors the decision makers on what is decent working conditions by sharing raw information might be the wrong strategy. Doorey (2005) suggests that a better option is to create local solutions that can empower the actors within the developing countries. Doorey (2005) further argues that the workers should be involved in the data-collection process and also have a say when it comes to how this information should be used. This way, an

appropriate solution can be created to fix issues, instead of corporations pulling out and moving production elsewhere (Doorey, 2005). This argues for the crowdsourcing companies to operate as internal, not external whistleblowers (Near & Miceli, 1992), reporting workers' feedback only to the brands so that they are protected from public scrutiny.

However, with the emergence of new technologies, the public awareness of problems around the world have increased considerably. The new media tools connect people, makes them aware of news across the globe and let them cooperate easier than before. Della Porta and Tarrow (as cited in Nash, 2010) are among the scholars claiming that there is a new form of protest, because the transnational activism has grown so much. The Internet is making the "collective identity" (Nash, 2010, p. 126) of movements more complex, however, it also enables "a more individualized participation" (Nash, 2010, p. 126). The new media technologies are increasing movements' networks, and is an important part of enabling collective agency transnationally (Nash, 2010). This further links to Swire's (2012) discussion on the right to use information, versus the right to limit the use of information. Workers might benefit from crowdsourcers use of their information, as it can contribute to activism against noncomplying brands and factories. Further, as argued by Baack (2015), it can be beneficial that raw information is shared with the public as they then get the possibility to create their own opinion and take part in the public discussion.

Nash (2010) claims that fast pace communication tools, the changed way of producing, consuming and distributing goods is re-structuring the world economy. Like Chen (2013), Nash (2010) claims that globalization also means that industrial processes are not controlled by the states. However, even though globalization can have negative impacts on workers' rights, globalization also represents "the development of new information technologies" (Nash, 2010, p. 45) which brings the world closer together. New media, like social media networks, blogs, Twitter and so on, are creating "apparently endless new possibilities for mediated interaction" (Nash, 2010, p. 45). Bringing workers into the communication loop can create an interaction between laborers, brands and the public, possibly improving working conditions by making it harder for companies to ignore violations. On the other hand, new communication tools might increase knowledge levels, but without functioning local law enforcement, factory management can still violate workers' rights.

Nash (2010) further claims that this new information technology is pivotal for creating global social movements. The technology facilitates a way for people to build collective agency and enables action transnationally, both online and off-line. There is little reason for not including factory workers into this opportunity. Nash (2010) emphasizes the ability to share ideas, opinions, circumstances and happenings, pointing out some of the functions crowdsourcing tools should have. These are some fundamental elements to consider in the design process of crowdsourcing tools for workers. However, Nash (2010) seem to be quite general in the possibilities that communication tools create. Considering the lack of local law enforcement and the serious violations of workers' rights, it is essential to consider if communication tools is a powerful enough solution to contribute to change.

2.3. Mobile technology and communication for change

In Greene and Mamic's (2015) paper series, it is claimed that mobile technology can be beneficial both for organizations and workers. In 2003, mobile phones had become mainstream, at least in the Western societies, and no longer only for the privileged (Castells, Fernandez-Ardevol, Qiu & Sey, 2004). As this is happening around the globe, mobile phones can be used to improve the working life for people, especially in outsourced factories. According to Greene and Mamic (2015), about 21 million people are victims of forced labor and 168 million children are victims of child labor. Half of the world's population has no social protection, and 1.1 million people die yearly because of poor working conditions. As argued earlier, social audits that has been the normal way of trying to improve the situation is not good enough. Greene and Mamic (2015) argue that global companies outsourcing their production can benefit from using mobile technology to get access to real information from the workers on the conditions in factories. With this, Greene and Mamic's (2015) arguments illustrate the relevance of this study's inquiry, both by arguing the possibilities of mobile technology and by suggesting the lack of effectiveness in audits.

In their report "Connected Worker. How mobile technology can improve working life in emerging economies" Vodafone Group Plc (2013) reports on the possibilities for mobile technologies to be beneficial especially for workers, start-ups and organizations in emerging economies. They claim that communication through mobile technology can be significantly beneficial for people's working life and also the economy. Six opportunities are presented as potential tools for creating shared value. These include using mobile technology to find jobs and to find the right employees, to secure transactions and verify identities, learning

possibilities, especially training relevant for jobs. They also describe possibilities to let organizations get access to information on working conditions (from the workers' perspective) so they can make improvements. Lastly, they introduce possibilities for using mobile phones to transfer wages, to reduce the costs compared to giving out cash payments. The report describes mobile technology as a tool that can transform developing economies and bring positive change (Vodafone Group Plc, 2013), and supports the idea that crowdsourcing tools is a phenomenon that can positively impact working conditions.

Bughin, Kaka, Madgavkar, Manyika & Parameswaran (2014) contributes with similar positive claims related to development of new technology. They claim that technology can be of economic value and have a disruptive impact on several parts of the Indian society. In addition, it can provide jobs, and increase living standards with the mobile Internet likely reaching between 700 million and 900 million by 2025. The technology can provide services that can improve health care, learning, agriculture, personal finances and more. Technologies like these can create deep change and empower India over the next decade (Bughin et al., 2014). As presented previously in this chapter, India is one of the countries where international brands source their products. Therefore, this study is valuable to understand the communities in which the crowdsourcing tools can be implemented. However, the study does not specifically mention which parts of India that can be positively affected by the mobile Internet, and does not mention the access to this technology for forced laborers. Despite the limitation in these specific details, the findings do provide a general understanding of the power of mobile Internet.

However, there are challenges when implementing technology solutions. The design of the systems needs to be developed so that it fits with the local context and is user oriented. Costs related to accessing the systems to share information must be dealt with. In addition, low literacy rates must be accounted for. The workers must also have an incentive to use the system, they need to be motivated so that they will continue giving information about the conditions (Greene & Mamic, 2015). These challenges provide useful guidelines when studying the user friendliness of the crowdsourcing tools. However, research on digital literacy is discussed later in this chapter to further understand the technology and mobile user habits especially in developing countries.

Field research in communities prior to the launch of crowdsourcing tools can give intelligence that can contribute to the development of the design of the tools. For example, is it important to carry out surveys, or rather prioritize educational quizzes? When crowdsourcing tools are designed so that they contribute to solve issues, they can be recognized as tools for development communication. This type of communication refers to the way in which people can use different media to create societal change (Choudbury, 2011; Schramm, 1979; Rogers, 1976). As claimed by Rogers (1976), development communication is the type of communication that is put into action with the aim to foster development, for instance by giving information to certain communities so that the citizens can improve their lives. Further, Choudbury (2011) argues that media and new media plays a central role by giving the communication a platform. In addition, today's new media technology provides platforms for interactivity. This interactivity might be a central part of the design of crowdsourcing tools for social change as both workers and brands needs to actively participate in the data gathering and content creation for the crowdsourcing tools to have an effect.

Choudbury (2011) argues that development communication can be "defined as the use of community to promote development" (p. 3). The reason for this is that the messages are designed in such a way that they try to transform people's behavior or to improve their life quality. This description fits well with the argument that crowdsourcing tools can contribute to positive change for outsourced laborers. Choudbury (2011) also describes development communication as something that "assists in increasing the participation of the people for whom it is meant, even if it is at the grassroots level" (p. 3). Thus, the communication is meant to include participation by the people in which it tries to facilitate positive change for. Choudbury (2011) presents some elements which are pivotal for a successful development communication process. The elements are responsiveness, being open for feedback, innovative and creative and also sustainable and continuous with independent validation. According to Schramm (1979), it is central to inform, instruct and facilitate participation. These theories present some valuable elements to consider when studying the design of crowdsourcing tools. However, considering the critique of the information deficit model (Dickson, 2005), it is not a given that communication will create change in society. Making information available, and communicating in the right way may not have any effect on working conditions, brands' willingness to create change, or local factory managers to stop abusing workers.

2.4. Digital divide & digital literacy

With the rise of mobile technology use, it is important to understand the audience's use of technology. This is researched by Islam and Grönlund (2011), Puspitasari and Ishii (2016) and Hilbert (2011) by looking at digital literacy and mobile usage in developing countries, and differences between men and women.

Islam and Grönlund (2011) argue that the use of mobile phones is a technology that can enable farmers in Bangladesh to thrive economically, by having access to market information. Studying the farmers' use of mobile phones, they find that being young is a factor that affects mobile phone ownership, however not income level or education. The determining factor is more about modernity: being young or having kids. The access to mobile phones is widespread, however the ownership and use of it differs between groups. Many have access to mobile phones through family members or friends. Most mobile phone use is done through calling – voice communication. The reason for this, Islam and Grönlund (2011) found, is that use of SMS is more advanced. They claim that sharing information through SMS is not as effective, as it is likely that it will not have as good reach as voice communication. Islam and Grönlund (2011) do however believe that SMS will be more used in the future, and that especially young people will use it more. These findings support design choices made by BFC and LaborVoices, as they use voice communication and mobile phones. However, seeing that this study is from 2011, it is expected that development in technology has happened, and that these factors might not be as relevant in 2017. However, it does point out that factors like age, income and education level can be factors that affect use of technology.

In their research on mobile leapfrogging in Indonesia, Puspitasari and Ishii (2016) found that the financial factor is not a significant factor to narrow digital divides. The financial situation of people is related to owning smartphones, however it is not directly linked with the actual use of mobile Internet. For the use of mobile Internet and having skills to use such technology, it is education and age that determines the usage. Puspitasari and Ishii (2016) argue that giving out the tools, i.e. smartphones, will not close the digital divide. However, the focus should be on ICT skills – promoting education and teaching of skills that enable people to successfully use technology. The access to feature phones and smartphones are not the issue: the skills in using these types of tool to communicate and find information is the issue. This underlines the need to educate workers on how to use crowdsourcing tools. Thus,

to educate workers on how they can use mobile phones and new media technology to find relevant information about working conditions and their rights. In addition, when users are using the systems correctly, it might ensure more valid information.

Cobble's (2016) research on labor movements shows that a big part of the laborers are women. According to Cobble (2016), many union members are women, in other words, the labor movement is "feminizing" (p. 153). This underlines the need to make sure that women have access to technology solutions for better working conditions just as much as men. In the research on women and use of information and communication technology (ICT) in developing countries, Hilbert (2011) finds that women are more active users of ICT than men. However, the access to digital technology is lower for women because of their disadvantageous position in society when it comes to employment, education and income level. On the other hand, it is a possibility that women can use these tools to decrease inequalities between women and men. The downside of ICT is that it can potentially create a bigger gap between men and women if the digital divide becomes an extra inequality factor that separates them even more. Hilbert (2011) brings up some former ways to describe women's attitudes towards technology, i.e. the belief that women are less tech savvy, have a phobia against technology and that ICTs are made for boys, not girls. This argues the need for crowdsourcing tools to make use of technology that is accessible to both men and women. When comparing the three cases in this study, BFC and LaborVoices might represent technology that is more equally accessible to both sexes, as their systems are available through any mobile phone. QuizRR on the other hand, uses tablets made available in factories. If women do not have the same positions and rights as men in the factory, the training system might be more accessible to men, creating a bigger gap between men and women. Nonetheless, ICT comes with opportunities to find jobs and get education and can be a tool for women to fight the current inequalities and disadvantageous positions in society. The opportunity, according to Hilbert (2011) lies in the access to ICT. Giving women access to ICT can help end the circle of being excluded and not having the same possibilities as men.

2.5. Crowdsourcing

To further understand the method of crowdsourcing, Estellés-Arolas and Gonzáles-Ladrón-de-Guevra (2012), provides a study which maps the scientific community's position and opinions on the topic. According to Estellés-Arolas and Gonzáles-Ladrón-de-Guevra (2012), the term crowdsourcing has many definitions and characteristics. Their research aims to

establish a consistent definition of crowdsourcing by combining a range of other authors' definitions. This study is relevant as it presents established findings on crowdsourcing which can be used to compare with the three crowdsourcing tools, LaborVoices, QuizRR and BFC's Outstanding Worker. Even if these three cases all collect data from crowds, they might differ from the traditional view on what institutes crowdsourcing.

One example of a crowdsourcing tool is Wikipedia, where anyone can create content and publish it. Wikipedia showed that the crowdsourcing model could be used to make knowledge available to everyone on the Internet, for free (Howe, 2006). The idea of crowdsourcing is that it doesn't matter where the contributor is located, as long as he or she has access to the technology that connects them to the project or system they are contributing to (Howe, 2006). Proctor (2013) describes the power of crowdsourcing as the possibility of putting the crowd's wisdom in dialogue rather than in competition with knowledge from formal institutions. Proctor's (2013) description illustrates well the way crowdsourcing tools for factory workers can provide meaningful information to brands and other organizations.

The word crowdsourcing is made up from crowd and sourcing, referring to the many people participating and the supplying of a service (Estellés-Arolas & Gonzáles-Ladrón-de-Guevara, 2012). According to Howe (2006), crowdsourcing is to outsource functions previously done by employees, to an undefined and large group of people. This is done by open call. Howe (2006) argues that the most crucial part, the part that makes something crowdsourcing, is using open call and that it's a large network of laborers that you're reaching out to. Howe (2006) claims that crowdsourcing takes place whenever a company reaches out to a crowd instead of having own employees doing the work.

Combining previous authors' definitions of crowdsourcing, Estellés-Arolas & Gonzáles-Ladrón-de-Guevara's (2012) definition of crowdsourcing is as follows:
A type of participative activity that is performed on the internet. It is requested by a person, an institution such as non-profit organizations or companies. And the crowd consists of individuals that have varying knowledge, heterogeneity and performs tasks via an open call from the requester. The tasks vary, but will always entail a mutual benefit for requester and task provider. Some kind of reward, being financial or work experience is given to the participator, and the crowdsourcer will be able to use the knowledge that the crowd has offered to their advantage. This definition is valuable to understand how the cases in this study works in practice as it applies well to all three tools.

According to Estellés-Arolas and Gonzáles-Ladrón-de-Guevara (2012), most authors refer to the crowd in crowdsourcing projects as general mass of people. However, some are also more specific, referring to the crowd as more of a group, for example customers, organized online communities or users. The type of people participating are defined differently among authors, some argue that the crowd participating must be smart and well-trained, others define them as web workers, and others as amateurs. However, the people in the crowd that participates in a crowdsourcing project must possess some knowledge that is relevant to the project. If the project is to retrieve opinions on a product, there is not a need for special skills, other than having opinions on the product. Thus, the "heterogeneity of the crowd" (Estellés-Arolas & Gonzáles-Ladrón-de-Guevara, 2012, p. 194) depends on what kind of project it is. So, the crowd that is participating in a crowdsourcing project is made up of individuals whose knowledge requirements are determined by the type of project they participate in.

There are different definitions of the tasks that the crowd must do in a crowdsourcing project. Some argue that these tasks must be done online, others that it must be human intelligence tasks (tasks that cannot be done by artificial intelligence), or that it is mainly problem solving, often for companies. However, the tasks must have a clear objective. "the crowd will need to carry of the resolution of a problem through the undertaking of a task of variable complexity and modularity that will imply the voluntary contribution of their work, money (in the case of crowdfunding), knowledge and/or experience." (Estellés-Arolas & Gonzáles-Ladrón-de-Guevara, 2012, p. 194). The problem can be defined as something composed of anything that the initiator needs help with.

The rewards for participating in crowdsourcing projects varies, and authors differ on what is considered the best kind of reward. Some argue that the best case is when the participants do not get a material reward, but instead are motivated to participate and passionate about it so they themselves want to participate just for that reason. Studies have been carried out for finding the motivating factors for why crowds participate (Estellés-Arolas & Gonzáles-Ladrón-de-Guevara, 2012). The outsourcer will differ in choice of rewards given, however they will try to satisfy individual needs as mentioned in Maslow's pyramid: "economic reward, social recognition, self-esteem or to develop individual skills" (Estellés-Arolas & Gonzáles-Ladrón-de-Guevara, 2012, p. 195). The argument that some form of incentives for

participation must be present, creates reason to ask how the crowdsourcing tools in this study motivate workers to participate and use their tools.

One can argue that some features might increase the willingness to participate in crowdsourcing, such as gamification. Gamification being "game elements in non-game contexts" (Deterding, Dixon, Khaled & Nacke, 2011, p. 9). Features like quizzes and the possibility to win prizes might give additional incentives for people to participate. As argued by Luminea (2013), gamification is a way to engage users. This is not only a design feature, but a valuable marketing strategy to keep users interested. Further, gamification can be used for behavioral change, as researched by Schoech, Boyas, Black and Elias-Lambert (2013). So, applying game design elements into systems for education can be effective for reaching learning goals. One cannot assume that all workers will be motivated to participate in crowdsourcing projects just because it is supposed to benefit them. Adding entertaining features and game elements can be a strategy to keep users interested.

A crowdsourcer is, according to Estellés-Arolas & Gonzáles-Ladrón-de-Guevara (2012), in most cases identified as a company, and sometimes organizations or institutions, and lastly requestors. Estellés-Arolas & Gonzáles-Ladrón-de-Guevara (2012) conclude that the crowdsourcer can be "any given entity that has the means to carry out the initiative considered" and that this initiator can be either "a company, institution, non-profit organization or an individual" (Estellés-Arolas & Gonzáles-Ladrón-de-Guevara, 2012, p.195). Initially, the crowdsourcer asks a crowd to solve a specific task. This can be to provide a solution to a problem, getting knowledge, access to skills and experience, competencies that the crowdsourcer doesn't have, value creation, increased profits, and innovation. So, the crowdsourcer gets access to all of these traits which can lead to benefits such as innovation. This gives reason to also ask how brands are motivated to participate and use the crowdsourcing tools in this study. It supports the claim that brands can get access to valuable information by implementing these tools in their supply chains. In addition, one can argue that it might not be the actual information that is the motivational factor of the brands. It might just be the ability to communicate to its stakeholders that the brand is making effort to become a more ethical supplier. In turn, this might create better reputation among NGOs and consumers.

Estellés-Arolas & Gonzáles-Ladrón-de-Guevara (2012) concludes that the process of crowdsourcing is an online process and it is distributed by the internet and involves the crowd as participants. However, the characteristics depend on what kind of project it is. Estellés-Arolas & Gonzáles-Ladrón-de-Guevara's (2012) research found that the medium used is the internet, and that the Web 2.0 is the basis of crowdsourcing. According to Brabham (2008), the web is the only technology that can enable crowdsourcing, because it has features that enables interactivity and more creativity. It is a platform that can be used creatively by the crowd, and not only a medium which sends messages between them. The nature of Web 2.0 and the possibilities for collaboration makes it the main medium for carrying out crowdsourcing projects. However, it is worth arguing that crowdsourcing is a method that can be carried out through other mediums. It might as well be done over the phone as on the Web, as long as there is available technology that enables the gathering and processing of big portions of data, and that the user is able to perform the requested tasks.

2.6. Crowdsourcing for social change

Studies on how crowdsourcing has been used for social change, further argues the possibilities of crowdsourcing tools for factory workers. Hildebrand, Ahumada and Watson's (2013) research on UNAIDS Secretariat is one example of a successful crowdsourcing project. This project used social media and crowdsourcing to engage the public in formulating problems and also come up with solutions to problems related to AIDS. The initiators wanted to seize the opportunity of social change led by young people across the globe by using communication technology. This was the first strategy document created through crowdsourcing in the history of the UN (Hildebrand, Ahumada & Watson, 2013). The project showed that using crowdsourcing enabled young people to directly participate with the institution, and that despite the digital divide, the online tools effectively mobilized action offline. By using social media and crowdsourcing, they were able to get "grassroots perspectives" (Hildebrand, Ahumada & Watson, 2013, p. 68) into the high-level policy process. Hildebrand, Ahumada and Watson (2013) argues that crowdsourcing enables direct engagement with key contributors. It also puts emphasis on the need for further research on this model of participation for community empowerment. This call for more research argues the relevance of this study, as it will look into how crowdsourcing can increase the collective agency of workers.

Further, Thigo (2013) discusses how information and communications technology (ICT) can

be used for socially emancipatory purposes. Discussing solutions for citizens' involvement in African politics, Ushahidi and Huduma, claims that ICT creates new possibilities for political engagement, in spaces that are not run by institutions or regulated by authority. Thigo (2013) also claims that these spaces facilitate new ways of collective action and gives equality to different voices by challenging existing distribution of power. Thirdly, Thigo (2013) argues that ICT can increase the capacity of authorities as well, as they are able to more easily provide information and resources to citizens. This demonstrate how brands can use crowdsourcing tools to provide information to their stakeholders, dealing with increased pressure for transparency. Thigo (2013) states that using technology for social transformation is a new area, and that it rises questions of impact and how effective it might be. As with crowdsourcing tools for worker and brand dialogue, it is worth being cautious about the level of effect they can have. There are issues that cannot be solve merely through improved communication. However, as Thigo (2013) argues, these tools can contribute to breaking the silence and expressing unfair treatment and human rights violations. Thigo (2013) further claims that communication technologies can contribute to disrupt power structures. This is especially interesting in regards to this study, as there is an imbalanced power structure between workers and brands. Thigo (2013) also urges more qualitative methodologies to research how this sort of emancipatory crowdsourcing technology offers information from the perspective of people in the margins.

This chapter has brought into light some aspects to consider when researching the possibilities of crowdsourcing tools for workers. The industries' complexity, different stakeholders, and developments in global trade have an impact on workers' conditions. Research provide plenty of positive claims towards technology and use of mobile phones for positive social change. However, it is important to consider the influence of for example legislations and functioning law enforcement. If these are not in place, it is hard to imagine that communication tools can make substantial changes. On the other hand, it is necessary to consider new tools that can contribute to change, even if they cannot be the sole solution for ending worker exploitation.

2. Methodology

This section will explain how the research has been carried out, and the method's relevance to the main research question and the complimentary sub-questions. The research is based on a multiple-case study. Three cases have been investigated through content analysis of in-depth interviews, product demonstrations, online articles and interviews, reports and videos.

To be able to answer the research question *'How can crowdsourcing tools increase the collective agency of workers?'* it was decided that multiple-case study was the most suitable method. This method enabled the study to focus on three cases: LaborVoices and their tool Symphony, Better Factories Cambodia and their project Outstanding Worker, and lastly, QuizzR's two digital training tools. To create a thorough understanding of how these tools work, and how they can create change for workers, four sub-questions were created. These were created to guide the research and to make sure different aspects of the crowdsourcing tools were looked into during the research, and contribute to a proper answer to the research question.

To understand how each of the systems work, the first sub-question is focused on the design, asking *'How are the systems designed?'*. As the tools are all dependent on users – both workers calling in and using the systems, and brands implementing them in their supply chains, the second sub-question is as follows '*How do the systems motivate people to participate?*'. One of the tools' aims are to gather information from workers – an important part of understanding what kind of problems they are facing in the workplace. Therefore, the third sub-question is '*What kind of issues are communicated through the tools*?'. Lastly, it is considered interesting what the information is used to, both concerning transparency in supply chains, and transparency towards the public. Therefore, the last sub-question is '*How are crowdsourcing tools making visible possible exploitation of outsourced laborers*?'.

3.1. Case study research: justification

It is seen as important to justify the choice of method. As Yin (2014) is often referred to in different works on case studies (Baxter, 2008; Ponelis, 2015; Tellis, 1997), Yin's (2014) work was chosen as the main source for case study guidelines. The following part will argue why a multiple-case study was suitable for this research.

According to Yin (2014), finding whether case studies is the right choice can be based on three main points. First, the research question is worded as a how or why question. Second, there is little control over behavioral events, and third, the study has a contemporary focus, looking at a contemporary phenomenon (Yin, 2014). The research question is about *how* these tools can be helpful tools for workers, suitable with the first point made by Yin (2014). Further, the "relevant behaviors cannot be manipulated" (Yin, 2014, p. 12). It was for example not feasible to conduct an experiment to test the tools researched in this study, given the scope of the study and the accessibility to the right group of people. In addition, more valuable and 'real' information comes from analyzing how the tools work, the development of the projects and their results and impact. Third, this study is focusing on tools that are relatively new and relevant in today's globalized world (Nash, 2010). The first case, LaborVoices, was founded in 2010, the second case is BFC's project Outstanding Worker which was implemented in 2013 and the last case, QuizRR, was founded in 2012 (LaborVoices; QuizRR; BFC, 2017).

Compared to other methods, such as purely in-depth interviews or media content analysis, the case study lets the research be more in-depth in how the tools work, as one can gather data of different kinds, like reports, data releases, interviews, and tool designs. The different kinds of data however underline the need for a systematic and thorough research design, and protocol to follow (Yin, 2014). Further, the goal was not to be able to generalize to populations, but to gain an in-depth understanding (Yin, 2014) of how these crowdsourcing tools work and how they may enable visibility of working conditions.

This study covers three tools and therefore it is a "multiple-case study" (Yin, 2014, p. 56). Yin (2014) does not make distinctions between the methodological framework that covers single- and multiple-case studies. However, it is argued that a multiple-case study is a wise choice because it enables an understanding of differences and similarities between the cases (Baxter & Jack, 2008). It is argued that being able to provide findings on contrasts and similarities creates more reliability and prove stronger results. The multiple-case study can prove findings to be relevant for more cases, proving that it is not only applicable to one case, as the single-case study might be unable to.

3.2. Sampling of cases

2.6.1. LaborVoices

LaborVoices is a company that collects data from factory workers through their system called Symphony. They operate mainly in Bangladesh and Turkey. Workers can call in to the system using their own phones and answer a survey. The system is based on Interactive Voice Recognition (IVR). IVR is a system that uses speech recognition to interact with the caller through recognizing voice and keypad use. The questions in LaborVoices' survey cover child labor, wages, fire safety, abuse, sanitation, work hours and worker recommendation. In addition, there is an open-ended question where the caller is asked if they want to give any other feedback. However, this option depends on the project. LaborVoices' tool has been implemented in over 200 factories in Bangladesh (LaborVoices, 2017). They have recently launched their tool in Turkey, to help detect child labor and abuse of Syrian migrant workers. LaborVoices has published two data releases, one from Bangladesh and one from Turkey. The Bangladesh report covers data from January to June 2016. In this period, 5265 workers called in. Their Turkey project's report covers data collected from February to July 2016, based on 3217 calls. The data is analyzed and shows the percentage score each factory in the data sample got according to the topics mentioned above, for example wages and child labor.

2.6.2. Outstanding Worker, Better Factories Cambodia

Kamako Chhnoeum (Outstanding Worker) is a project by ILO's Better Factories Cambodia (BFC). It was launched in September 2013. This tool is meant to educate factory workers, offering education based on what the workers find important. The workers call in and answer quiz-questions related to different topics like wage, health and safety. Their system is run through a software provided by Verboice, and is also based on IVR. In the early stage of this project, the workers could also record a message at the end of the call. However, this option is no longer in use. BFC also choose random callers to win a prize for participating in the project (BFC, 2017). In addition, they have created an app called Labour Law Cambodia. This app delivers the same information as the IVR call-in system, offering information and quizzes on the same topics. This app is an additional tool aimed towards factory management and other interested stakeholders with smartphones, while the previously mentioned call-in system is for any phone, also non-smartphones.

2.6.3. QuizRR

QuizRR is a digital training service. They offer two applications focusing on social responsibility. The first is Rights & Responsibilities, which aims to improve workers' and

factory managers' understanding of rights and responsibilities in the workplace. The second is Worker Engagement, which focuses on dialogue and engagement in the workplace. This training is happening in China, Bangladesh and Mauritius. QuizRR is an educational tool and a knowledge platform and aims to increase knowledge, dialogue and engagement between employees and employers, engaging people at all levels in factories, and give a joint understanding of rights and responsibilities. QuizRR also collaborates with other stakeholders. For example, they started a collaboration with the multi-stakeholder initiative Ethical Trading Initiative (ETI) Norway in 2016 to improve collaborations with brands and corporations (ETI Norway, 2016).

The cases were chosen to understand the phenomena of crowdsourcing for social good; how crowdsourcing can be a useful method for factory workers to improve their working conditions. The cases where chosen based on their ability to represent systems that actively reach out to factory workers while gathering information on knowledge levels, working conditions and more. Further, the cases give insight in different ways to operate. Outstanding Worker is a crowdsourcing project run by a nonprofit organization, Better Factories Cambodia. Better Factories Cambodia is part of ILO, and is dependent on funding to maintain this type of projects. LaborVoices and QuizRR are for-profit companies that gain their profit from brands being their clients. Lastly, each case has chosen a different approach when it comes to design. LaborVoices provides surveys to workers and share information that they have gathered back to the workers. Outstanding Worker functions similarly, but they provide workers with a knowledge quiz and then share information based on the quiz topic. And lastly, QuizRR provides educational videos on tablets in factories, and then ask questions related to the videos. These similarities and differences represent interesting elements for comparison, and the cases together are believed to provide an in-depth understanding of the phenomena of crowdsourcing for social good.

Contact was made with representatives from all organizations, LaborVoices, QuizRR and Better Factories Cambodia. Interviews were scheduled with sources that were expected to have extensive knowledge about the crowdsourcing tools they represented. Three semi-structured in-depth interviews were conducted. The initial sampling method for the interviews can be classified as purposive sampling. With this method of sampling, a small sample can give valuable insights into a phenomenon (Guarte & Barrios, 2006). In addition, interviewees recommended others to contribute with more information on projects related to their tools,

which can be classified as snowball sampling (Patton, 2002). These interviewees were contacted for further insights on the project they were linked to.

3.3. Data collection procedure
3.3.1. Interviews

Two interviews were done over Skype, and one by using GoToMeeting, a tool for online meetings. The interviews were not held in person because the participants were located in other countries; the U.S, Cambodia and Hong Kong. The first interview was with Jill Tucker, former Chief Technical Advisor for Better Factories Cambodia, held on 21st March 2017. Her role was central in the launch of the Outstanding Worker project in 2013. As she is no longer working on the project, she proposed making contact with Esther Germans, current Programme Manager for Better Factories Cambodia. I was further put in contact with Sara Park, Technical Officer. An interview was then set up on 25th April 2017 with Sara Park and Ly Sokheng, Communications Assistant at Better Factories Cambodia. The third interview was held with CEO of LaborVoices, Kohl Gill on the 19th of April over Skype.

The most valuable about the interviews was that they gave insight to what experienced professionals' thought about using crowdsourcing and technology to reach workers. They all had different takes on what is important to focus on for these tools to work, and for conditions in the manufacturing industry to improve.

The interviews gave insights to how the systems are designed and the process of finding the right things to share and to ask workers. This process was found to be comprehensive and something that needs to be put a lot of effort into. The interview with Jill Tucker gave insight in how Outstanding Worker developed as a project based on a lot of experimenting. The method of gathering and sharing information was very new at the point which they started, and this affected their approach. For example, they tried various ways to reach workers to make them use the system, when one didn't work, they tried a new method. She also described how they approached workers and called them "expert by experience", meeting up with them and learning what other workers needed. This group of experts would also give trainings to other workers in how to use the system. By using these workers' input, they could get a clearer picture of which areas where there was most noncompliance. They created questions and information based on this, and ran it by this focus group to check if they understood the question, if the wording was appropriate and understandable. This way they

could adjust the tool so that it was customized to what the workers wanted. Further, BFC representatives Sara Park and Ly Sokheng, explained that they would change the questions quarterly or every six months based on which questions are answered right and wrong, meaning that they keep questions that workers get wrong. In additions, questions are changed based on current news like strikes and other relevant news.

Kohl Gill (LaborVoices) described similar ways to create customized tools for workers, explaining that they carry out field research to learn about new communities where they launch their tool. This field research and testing is done through in-person surveys, interviews, and focus groups asking what information the workers would want. In addition, research has been carried out to broaden the scope of what LaborVoices do. In addition to surveying workers on topics related to their place of work, field research on human trafficking in the garment sector has been carried out to find out whether workers experience this in hiring processes. The results of the research are significant, showing that workers experience elements of human trafficking like threats of violence, documents being withheld and more.

Further, the interviews helped giving answers to how workers were motivated to participate and use the systems. According to Jill Tucker, the most successful part was using radio advertisements to market the system, this was much more effective than directly approaching workers. BFC representatives Park and Sokheng have also implemented more efforts to use social media to spread their messages, using Facebook mostly as it is the most popular social media channel. LaborVoices were mostly focusing on direct marketing by having a team going into communities and talking about their tool. However, their marketing efforts were varying according to the places they work.

Further, the participants gave meaningful insight into how crowdsourcing tools can help making exploitation of workers visible. Jill Tucker emphasized the possibilities of mobile technology, and that it has not been exploited to the full extent that it can, but that it will improve in the future. Further, she did not necessarily see consumer engagement as the sole key to solve issues in the industry, but that the focus should be on making brands' more accountable, and their practices more visible to the public. Kohl Gill focused on the importance of data ownership, stressing the importance of not being owned by brands, being able to for example publicize their results. BFC representatives Park and Sokheng saw the project as an important way to reach workers, however the priorities of BFC as an

organization is broader than only working with crowdsourcing, so Outstanding Worker was only one of many smaller projects, that would contribute to their other work on protecting workers' rights.

A limitation to this part of the study is that an interview was not conducted with any representative from QuizRR. Several attempts to schedule interviews were done, and contact was made with the company. However, in the end QuizRR was unable to take part in an interview, and the analysis had to depend on information available online. An interview with QuizRR would have been preferred, as it could have contributed with valuable insights in their operations. In addition, this would have created a more balanced representation of the cases in the study.

The following table gives an overview of the interview guide. This was the basis of each interview; however some details were adjusted to make it completely relevant to the participant of each interview. These changes were for example adding the question "Do workers typically know the name of the factory they work, and are they able to report this?". This question was added after the first interview, as it emerged as a problem that BFC had experienced in the beginning of the project. The interview participants are professionals and their thoughts were seen as relevant regardless if it emerged from the interview guide, or if it if it were topics that emerged organically. The main focus was on keeping the conversation relevant to the topic of their crowdsourcing tools, and gaining valuable material for this research.

Table 1. The interview guide:

Theme	Questions	Why
About the project - Development - Partners	- Can you tell me about your role in the project? - How has the project developed, and where is it today? - Have you had any specific partners working on improving the project? - What is the aim of the project?	To understand what is happening with the projects, how it is it development, and find out about news in the projects that might not be published online.

Design - Reporting of data - Updates / changes	- Can you tell me how the tool works? How is the data reported? - How do you notice if there is need to adjust the questions asked through the system? - What kind of changes has been done with design/technology after it launched?	To understand how the tool works, how it is used by factory workers and how the data is collected. To understand how they make decisions to change and update the tools. To understand how the process of development has been. *Based on research by Greene and Mamic (2015), Puspitasari and Ishii (2016), Islam and Grönlund (2011).*
Participation - Incentives - Entertainment - Marketing	- How do you make sure the workers' have incentives to participate and share information? - How do you spread the information about the tool in factories, so that people will use it?	Understanding how they create incentives to use the tools, and what kind of marketing efforts are used and seen as effective. *Based on research by of Estellés-Arolas & Gonzales-Ladrón-de-Guevara (2012), Brabham (2009), Thigo (2013) and Hildebrand, Ahumada and Watson (2013), Schramm (1979), Rogers (1976) and Choudbury (2011).*
Workers' issues - Creating questions - Prominent issues - Worker knowledge	- What kind of issues are mostly shared in the open-ended messages? o Are there issues related to gender? - Do workers typically know the name of the factory they work, and are they able to report this?	To understand what kind of issues are reported by the workers. Secondly, knowing factory name was seen as an issue for BFC, which was further investigated through the interviews. To understand how this problem was tackled. *Based on the ILO conventions (ILO, 2017), Greene and Mamic (2015), Delaney and Connor (2016), and Chen, Zhang, Zhou (2015).*
Worker empowerment - Technology and working life - Transparency	- How do you think the use of mobile technology can affect the working life of employees in factories?	To get an understanding of how they see the furture and how effective these systems can be.

| - Results
- Future | - How has the information given by workers been used?
    o Have there been any changes in corporations' operations or in factories as a direct result of the information gathered by the tools?
- What do you think is the most important change that needs to be done to make workers/or working conditions more visible? | And to understand if the systems creates more transparency, and actual changes in factories.

To understand their view on transparency towards the public.

Based on research by Hilbert (2011), Puspitasari and Ishii (2016), Islam and Grönlund (2011), Castells, Fernandez-Ardevol, Qui and Sey (2004), Vodafone Group Plc (2013), Bughin et al., 2014), Greene and Mamic (2015), Nash (2010), Chen, Zhang and Zhou (2015), Doorey (2005). |

3.3.2. Reports and product demonstration

The most important insight from the reports and product demonstrations were the issues and themes that each of the tools focused on sharing and gathering. The reports and product demonstrations showed the exact themes and questions, which helped answer the question of what kind of issues are communicated through the tools. In addition, the reports and demonstrations gave insight to more details about the tools' design. For example, that they have an automatic system where workers can call in, or that they use video training through tablets and then provide quizzes. This data was useful as it provided specific and detailed information and facts. This material consisted of five reports on the Outstanding Worker project by BFC and one article on Verboice, the software which the Outstanding Worker runs on. Further, 2 reports from LaborVoices on their projects in Bangladesh and Turkey, and two product demonstrations of QuizRR's tool, one for Worker Empowerment and one for Rights and Responsibilities.

3.3.3. Online articles, blog posts, radio interviews and videos

This online material was useful to get more information about each of the cases. The material gave insight from different perspectives, like brands, the cases themselves, and experts on corporate social responsibility and human rights. This material provided insight to opinions on the systems' possibilities, their usefulness, development, how they are used by others, and how they can make an impact. This material helped answer the questions on how

crowdsourcing tools can make visible possible exploitation of laborers. This sample consisted of 13 articles on BFC and their Outstanding Worker project, 23 articles on LaborVoices, 2 podcast interviews and the blog section from their website, lastly, 15 short film clips created by QuizRR, and 29 articles, a combination of shorter blog posts and longer articles, and 6 quotes from users of the systems.

The big amount of information available online also suggested that the organizations had put effort into spreading information about their projects to the media. For LaborVoices, the high amount of available data resulted in choosing to use online articles from 2014 to 2017. For QuizRR and Better Factories Cambodia, less data was available and it was decided to use articles and other types data like blog posts and video clips available online without restricting it to a time period.

3.4. Thematic analysis

All the material was transcribed and analyzed based on Boije's (2010) framework for qualitative analysis. The process started with reading all the documents that had been collected. Secondly, the data was organized in a manner so that it could be coded and analyzed. It was decided to insert all the transcribed data into Atlas. The main objective of this was to create a workbook that would contain all documents from each case.

Open coding

Further, the open coding process took place. This was the first step of the coding process based on Strauss and Corbin's three steps of open coding, axial coding and selective coding (Strauss & Corbin, 1990). First, the data was read through after it was imported into Atlas. In this process, some documents were seen as not relevant and removed. Then, the texts were given appropriate codes. All relevant fragments were given codes, and documents were reread to find whether the same code could be used for several fragments. Fragments which seemed irrelevant to the research were kept in the data files, but not given a code. The first step of the coding process gave initial impressions of the data. For example, the view on transparency especially regarding corporations' openness towards consumers differed between some researchers and participants in the study. In addition, it was found increasingly important to continuously go back to the research questions while reading and coding the data. The reason for this was that it was easy to unintentionally shift focus onto how the media presented the case of worker conditions, which was not the intended focus. Further, the coding process had

an inductive approach, where theoretical concepts did not take over the analysis process (Boeije, 2010) in this initial stage.

Axial coding

The axial coding process aimed to connect the parts of the data that covered the same themes. Before the axial coding started, some of the open codes that were overlapping were combined. Further, the codes that were related to each other were connected. Main codes and sub-codes were developed. Such as *worker communication issues, communication skill practice* and *in-factory dialogue* were grouped into a new code *need for dialogue training*. Additional codes were created for data that had not been coded suitably in the open coding process. The axial coding process found the dominant elements and the less important elements in the dataset. This meant removing codes that were not seen as relevant to the research and the most important and representative codes were kept.

Selective coding

In the selective coding process, the data was connected to the literature framework. During the coding process, it was important to again look for rival explanations that were not necessarily on the same page as the literature framework, as suggested by Yin (2014). For example, the data suggested that crowdsourcing can take place outside the web, instead by using mobile phones. In the research by Estellés-Arolas & González-Ladrón-de-Guevara (2012) and Brabham (2008) it is proposed that the web is the basis for crowdsourcing.

The analytic technique can be referred to as "explanation building" (Yin, 2014, p. 147). This was done by reflecting upon the findings and comparing them to theory and previous research during and after the coding process. The explanation building is a process of repetition. The data was examined repetitively, and findings from the data were compared to the literature framework. This process was repeated several times, and during this process, explanations were built. There are limitations to this process, such as bias and overlooking important data or shifting away from initial topic. However, to avoid this, the research questions helped to indicate which aspects of the cases were to be analyzed, and follow the intended aim of the research.

Table 2. The coding process:

Example: Quote from data	Open codes	Axial codes	Selective codes

"While this project delivers information to workers, it simultaneously gathers information about the level of knowledge that they possess, as well as recorded factory-specific information"	• Information back to workers • Participation in communication • Mobile phones for social good • Ask the workers • Two-way communication • Access to information	• Worker empowerment • Communication for change	Development communication (Choudbury, 2011; Rogers, 1976; Schramm, 1979). Mobile Technology for social good (Vodafone Group Plc., 2013; Bughin et al., 2014; Greene & Mamic, 2015)
"LaborVoices not only gives workers a voice, literally, and supports supply chain transparency – it's also a useful business tool" *"The company can follow up on complaints and track progress over time. They can also help to answer specific questions, such as "are fire exits unlocked at all times?"* *"The results can be measured and shared within the organization as well as to the buyers, enabling all stakeholders involved to make sure that the workers are informed of their rights"*	• Consumers' knowledge about brands • Brands knowledge about their production • Business tool • Project aim • Brand responsibility • Factory compliance • Action on results • Limited results with hotlines and audits	• Knowing about conditions • Increase compliance in industry • Measurability	Supply chain transparency (Doorey, 2005; Chen, Zhang & Zhou, 2015; Greene & Mamic, 2015).
"So, if we look at the current data of the mobile phones among Cambodian people you may be a bit surprised because over 94% of Cambodians have	• Spread of technology to developing countries • Using technology for worker empowerment	• Increased mobile use advantage • ICT training • Design	Digital literacy (Islam & Grönlund, 2011; Puspitasari & Ishii, 2016; Hilbert, 2011; Vodafone Group Plc., 2013)

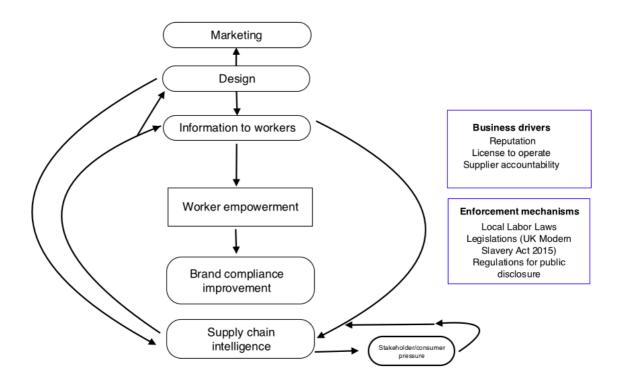|			
their own mobile phone". *"Due to illiteracy, low education levels and the fact that the Khmer Unicode is not available on many inexpensive phones, workers generally do not use their phones for texting, but rather calling".*	• Digital understanding • Language illiteracy education levels		
"you know, so we wanted to find a way to connect workers, uhm, at their leisure, so whenever they wanted to, to connect with us." *"BFC will promote this project by providing lucky draw prizes to a random selection of workers who call in."*	• Prizes for participation • Giving out information in communities	• Marketing • Participation incentives	Crowdsourcing participation incentives (Estellés-Arolas & González-Ladrón-de-Guevara, 2012; Greene & Mamic, 2015).

3.5. Unanticipated events and data saturation

This research was partly dependent on external sources, which could not be controlled. Establishing contact and creating a certain degree of collaboration was necessary for this research project to succeed. The research was also dependent on participants to devote a certain amount of time for interviews and to provide data. There were situations where participants were not able to partake in the study as planned. This was in events of cancelled interviews and not providing additional data as requested prior to the data collection. However, all cases were included in the research as planned, and there were no need to find additional or other cases. In addition, there were extensive amounts of data available online, so that the point of saturation in terms of data was reached. The combination of interviews and online sources has proved to be enough data to establish an in-depth research project that will be able to generate meaningful answers to the research question and sub-questions.

4. Results and Analysis

The findings and analysis provided arguments that are central to how crowdsourcing tools can increase the collective agency of workers. The findings have been used to sketch a conceptual model. This model illustrates the mechanisms between the different system components and indicate how they together can contribute to empower workers. The model is considered to be positively self-reinforcing. The end result is possible increased worker empowerment. This means workers being able to report on conditions, and having access to the information and training they need to solve local work-related issues. This reflect an important finding in this study suggesting that, for workers, the information sharing feature might be the most beneficial feature of crowdsourcing tools. For example, workers knowing what proper sanitation standards are, and how to create dialogue with management in factories. This can lead to increased brand compliance because workers are able to solve problems locally. Increased brand compliance refers to improved conditions in factories, like fire exits being open, wages paid on time and proper sanitation standards. Basically, factories should comply with local law and the ILO conventions that are in force in the country. For example, Bangladesh has several ILO conventions in force, covering rights to organize and collective bargaining, abolition of forced labor, equal remuneration and elimination of child labor (ILO, 2017). Using crowdsourcing systems can help bettering standards, and support the enforcement these conventions if workers are able use their knowledge and training to solve issues in the factories. In addition, brands can get information on problems and conditions in their supply chain so that they are able to see what needs to be improved. This is a way for the brand to go in and try to make improvements where they see it is needed. For example, knowing that a certain factory has problems with verbal abuse of factory workers, a brand can go in and implement measures to try and stop this practice. Hence, brand compliance can increase, meaning that the brands' factories complies with local laws on how to treat employees. For example, proper wages, no child workers, or access to clean drinking water.

Figure 1: Conceptual model crowdsourcing tools for workers

To guide the reader, the model and its key components are presented at the beginning of this chapter.

This conceptual model is created based on the findings of this study. The analysis resulted in these main elements which show the dynamics in a crowdsourcing tool for brand and worker dialog. Each element does not have one specific and correct way of being carried out. For example, there is not one clear answer to how one should carry out marketing efforts for these types of crowdsourcing tools. However, marketing in itself is a necessary element. This chapter will discuss the different approaches and meanings of each of these elements.

The findings emerged from the data analysis of interviews, articles, short video clips, reports, web sites and system demonstrations of the cases that have been studied in this research. These cases are LaborVoices' tool Symphony, QuizRR's two digital training tools and BFC's Outstanding Worker project. For convenience, the cases will be referred to as LaborVoices, QuizRR and BFC throughout the chapter.

4.1. The conceptual model's dynamics

The model consists of seven parts. First, **marketing** makes the systems visible to the users. The users are considered to be workers, factory management and brands. It is the creator of the crowdsourcing tool who carry out the marketing efforts, in this study, QuizRR, LaborVoices and BFC. Towards workers, these three organizations market the benefits of using the system if you are a factory worker. Towards the brands, they market the benefits of implementing such a tool in a brand's supply chain. Then, the **design** lets workers, factory managers and brands use the systems. The design makes it possible to share information with workers. Findings in this study indicate that this in turn can **empower** workers as they learn about their rights and build skills to solve problems and better their working life. Further, this can increase **brand compliance** meaning that the factories they source from improve how they treat workers as workers learn how to solve issues, and perhaps can implement changes themselves. In addition, the design of the tool makes it possible to collect data, which gives **supply chain intelligence**. This intelligence can show brands that they need to implement efforts to solve certain problems. In addition, if brands learn that many workers for example do not get the maternity leave they have a right to, this means that information needs to be improved. Thus, workers can learn how to talk to managers to get the correct time of maternity leave. Having updated this information gives more supply chain intelligence on whether this information was useful for the workers. This goes in a loop. The supply chain intelligence can incline brands to be more **transparent to other stakeholders, like NGOs and consumers** about their practices. One reason for brands to be inclined to be more transparent is suggested by the data to be that they can share that they are using worker empowering, condition-improving tools. More transparency can be achieved, when for example NGOs and consumers **put pressure** on brands to keep giving out this kind of supply chain information. This fuels the process and can make brands take even more use of the systems and collect more data. Another part of this transparency is **pressure among brands**. Taken that some brands get positive reactions from consumers for using crowdsourcing tools, other brands might join in. In addition, fear of bad reputation and legislations like the UK Modern Slavery Act 2015 can pressure them to make use of these systems.

On the outside of the model, there are two elements referring to outside factors that affect the effectiveness of using crowdsourcing. In addition, these represent reasons for brands to use crowdsourcing tools. The first one, **business drivers,** points to **reputation**, as reputation can

be improved if brands implement these sorts of efforts. Second is **license to operate**, as this tool can increase the public's approval of the brand's operations, and increase acceptance in local communities and among other stakeholders. Third is **supplier accountability**, as the crowdsourcing tool can contribute to better factory conditions, meaning that turnover decreases, this in turn makes sure workers have skills conduct their work tasks properly, less mistakes, less production stops due to accidents and so forth. The second outside element is **enforcement mechanisms**. This refers to laws that forces brands to take action and make use of for example crowdsourcing tools. The first mechanism is **local labor laws**, which creates the standards to which brand suppliers must comply. Second is **legislations** directed at brands. An example is the UK Modern Slavery Act 2015, which requires brands to work against modern slavery, recognizing corporations as responsible for what happens in their supply chains. Lastly, **regulations for public disclosure** can pressure brands to disclose social conditions in their supply chain. Thus, crowdsourcing tools can be a method to collect the information that needs to be disclosed.

4.2. Marketing – creating incentives to participate

Crowdsourcing tools that work for empowerment of workers, ought to market themselves as promoters of these changes. The way a crowdsourcing tool is designed affects what kind of marketing efforts are most effective, and who it is most important to reach. These systems are built with the possibility to reach out to many people at the same time, which makes it necessary to work on spreading the word of the systems. Second, having used a system at one time does not necessarily mean that someone will use it again. At the end of the day, the systems are dependent on users to contribute with content. Active marketing to remind workers to call in can increase the chances of a continuous stream of data collection in addition to a continuous flow of information sharing. However, the findings suggest that the crowdsourcing tools need to be marketed towards brands just as much as workers. The following section will focus on marketing efforts to create incentives to use the crowdsourcing tools.

To give more context to this, a brief description and discussion of the type of business model of each tool is seen as necessary.

LaborVoices is a for-profit company with a platform called Symphony, that enables workers to call in and answer a survey about wages, sanitation, work hours, fire safety, abuse and child

labor. Then, workers are able to get information on topics they are interested in, for example knowing more about factories in their area. In addition, LaborVoices conduct field research on topics like human trafficking in hiring processes. LaborVoices work on project basis for clients, or brands. Brands get access to information on the topics in the survey, in the areas where they have factories. So, LaborVoices depend on brands to become their clients. However, they do not publicize which brands they work with. The reason for this is, according to Kohl Gill, CEO of LaborVoices, that they are not ranking brands. However, they do put the information they gather into the public domain. This is done without mentioning brands, only factories. Through these reports, they rate factories according to wages, sanitation, work hours, fire safety, abuse, child labor and worker recommendation. The reports include all factory names and addresses. Brands can then subscribe to get the latest data on key social compliance metrics of factories in their dataset. Even though the brands are not mentioned in the reports, Kohl Gill argues that this information can easily be matched with brands' supplier lists, if brands have these supplier lists available online.

"The interesting aspect of that to me is that we're putting all this data into the public domain, anybody can connect the factories to the brands". P 3, Kohl Gill, CEO LaborVoices.

This is argued with the fact that many major brands are now publishing their supplier lists. So, with the information from LaborVoices and the information from these brands, one *can* find which brand source from the factories with best conditions. LaborVoices argue that their aim is to create a conversation among suppliers and brands.

BFC is an organization working for better conditions for workers in Cambodia. BFC is a part of the ILO, and is a non-profit organization. Outstanding Worker is their crowdsourcing tool and a project that was started in 2013. This project was based on funding received from Disney, which enabled them to take use of software offered by Verboice. This software made it possible to offer workers a call-in system where they answer a quiz on rights and responsibilities, and then get more information on topics they are interested in. BFC are depending on funding to run projects like Outstanding Worker. It emerged during the interview with BFC that they are no longer receiving funding from Disney. The reason for this was not mentioned. However, because the funding from Disney ended, it negatively affected their project's operations. BFC would usually publicize reports every six months showing the results and feedback from workers in the Cambodian garment sector. However,

they would not publicize which factories these results were linked to. One reason for this was problems with identifying factories through their systems. After the funding stopped, BFC are no longer able to publicize reports on their findings, due to lack of human resources. In addition, the design was downgraded to be less dependent on human resources. These findings suggest that solely depending on funding from independent sources might not be a sustainable financial stream. The reason being that the funding is voluntary, and can stop at any time. Compared to BFC, LaborVoices and QuizRR have a more sustainable income as they create cooperation with clients and offer them their service.

QuizRR is a for-profit company which works towards making brands implementing their digital training system into supply chains. Local staff is hired to educate workers and managers on how to use the tool. The tool is meant to teach workers communication skills in addition to topics like health and safety. The trainings are done on tablets, in factories.

"*Having common knowledge creates prerequisites for dialog and cooperation and thereby change*" (QuizRR, 2015).

So, having trainings in the workplace can work as a way to create a common understanding of what standards are expected, and that all levels are aware of rights and responsibilities. However, the in-factory trainings remove the possibility for workers to be reached outside their workplace. This contradicts with some main ideas of crowdsourcing, that it is supposed to gather grassroots perspectives directly from the crowd (Hildebrand, Ahumada & Watson, 2013). The reason for this is that managers are present in the factory during the use of the tools. So, in QuizRR's case, there is some form of intermediary that can disrupt the direct and free communication with the workers.

QuizRR focuses on positive endorsement of brands that they have as clients. They also keep an open list with names of factories where their system has been implemented. They do not, however, give out information on data they have collected, like knowledge levels or how useful workers find their system. Therefore, the marketing of QuizRR's tool might be more directed towards brands, and also towards these intermediaries that are supposed to make sure trainings are implemented. The reason, as this study has found, is that seemingly, whether or not the workers actually would like to do the trainings are not essential for QuizRR. The data analysis points to that the essential part is having a brand implement it in their factories, making sure the trainings are completed. One cannot know if the trainings are completed

voluntarily. This is a weak point to their system. The system is created so that trainings must be done in-factory and with staff around. This might make the results biased, as the workers might not express themselves freely under supervision.

First of all, these three crowdsourcing systems are reaching out to crowds and are looking to share and collect information from this crowd. Hildebrand, Ahumada and Watson (2013), state that crowdsourcing makes it possible to get "grassroots perspectives" (p. 68), and Thigo (2013) argues that crowdsourcing creates a space for the crowd's voice. So, how the crowdsourcing systems are marketed is part of making it accessible, trustworthy and appealing for workers to use. The data revealed different approaches to how to increase visibility and motivate workers to participate. In addition, marketing is essential to create relationships with brands to make them implement systems in their supply chains.

Findings suggest that there are some main marketing elements that can create incentives for workers to use the systems. First, it was found that a great deal of effort was put into customizing marketing efforts to the users. Which, first of all means recognizing who the user is. For example, QuizRR had an idea of their first user group in China:

"We start in China because our partner companies wanted us to, and because it works well because they are tech savvy" (Wolf-Watz, 2015).

Customizing marketing efforts were described as something that was done through research and testing of different methods. LaborVoices operate in several countries and communities, and their strategy for approaching workers depends on the local community. LaborVoices approach to finding workers and marketing their systems does not necessarily start in factories, contrary to QuizRR.

"Rather than engaging workers to use the platform only inside of factories, which often causes delays due to hesitant factory managers, the new model targets workers directly via culturally relevant marketing campaigns" (Steinmeyer, 2016).

Culturally relevant marketing campaigns was further explained in an interview with Kohl Gill, CEO of LaborVoices:

"We usually go in with a first customer. So the customer may have a few factories that they are already sourcing from, they want some data on these factories so those, you can say keystone customers, we start off with them, and then we build a local team that then understands the you know, the local situation among factory workers and they devise a sort of marketing plan for reaching sort of more and more workers in that sector". P 3, Kohl Gill, CEO LaborVoices.

After being hired by a client, LaborVoices goes into the community with a local staff team and builds an understanding of the local situation among factory workers. They then create a marketing plan for reaching as many workers possible in that specific sector. The local team starts testing marketing plans to find the most useful approach. The approaches differ according to the communities' mobile phone usage and social conditions:

"For example in South Asia, uhm, we found that direct community marketing campaigns are very effective, like you know just actually going into workers' like residential communities ah because workers seem to be pretty concentrated that's incredibly effective at bringing workers into the system". P 3, Kohl Gill, CEO LaborVoices.

Findings further suggest that it is beneficial to use multiple channels to market the systems. BFC uses radio advertisements to efficiently reach a large scale of workers in Cambodia. Reports show that radio advertisements resulted in an increased number of callers.

"Already calls to the phone hotline have increased from a starting level of 1,000 – 2,000 workers per month to a peak of almost 15,000 workers in March 2014, when BFC commissioned a radio spot advertising the service" (ILO, 2016).

This increase in callers indicates the effectiveness of using traditional popular media channels to spread the word of the system. In addition to radio ads, BFC use Facebook to give out the same type of information that their call-in system shares. This indicate the usefulness of hybrid marketing systems (Moriarty & Moran, 1990), where several channels are incorporated into the communication strategy. By combining old and new media channels, BFC are creating an ecosystem where workers are approached both online and offline. The adding of channels is a way to more efficiently reach users and reduce costs (Moriarty &

Moran, 1990). In BFC's case, their attempt of marketing directly by handing out cards with their phone number on in industrial areas did not give the same effect as radio advertisements.

LaborVoices and BFC have different marketing approaches. Mainstream radio channel advertisements increased number of callers significantly for BFC, however LaborVoices found that direct community marketing campaigns were most effective, at least in East Asia. Direct community marketing was described as having local teams go in to for example residential communities and talk about the system, going door to door, handing out leaflets, and having sponsorships of events. In addition, they use SMS to remind and encourage workers to use their system. They also experiment with different approaches, like social media.

"In other areas, you know, I think that the you know we're still experimenting a lot I think there will be a lot of uptake with apps because in other countries you know workers are just more better at technology they are also more spread out, they're not concentrated in dormitories and things like that so yeah it makes more sense to reach workers through apps and social media and other kinds of approaches". P 3, Kohl Gill, CEO LaborVoices.

Findings and previous research supports the marketing strategy chosen by BFC, using a range of channels creating a hybrid marketing system. However, direct community marketing might rather create a way to meet with and talk to workers directly. Findings suggest that the direct community marketing creates an understanding of how the workers perceive the system, and is an opportunity to teach them more about why and how to use it. LaborVoices' net promotor score is an indicator on how users perceive their system.

"Right, because when you try to reach a community, you know where the community is, and you know, then you have the opportunity to, you can go to the tea stalls, you can go door to door, you can have leaflets and flyers, you can have sponsorships of events, to get workers to know about your system and the benefits there, one of the remarkable things that we've seen that when we ask workers about the system, 92% of workers tell us that they would recommend the system to another friend of family member". P 3, Kohl Gill, CEO LaborVoices.

Keeping the quality of their system high, LaborVoices have managed to get a 92% net promotor score, meaning that 92% would recommend the system to a friend or family member. A score of 92% means that their customers can be categorized as promoters. Promoters are loyal and enthusiastic customers. They are satisfied and will keep using a product or service (CustomerGauge, 2017). For additional context, the top net promotor score performing brand today has a score of 97% (NPS Benchmarks, 2017). With a score of 92%, LaborVoices is not far behind. Workers have shown to be intrinsically motivated to talk about their working conditions, according to an interview with Director of Product & Marketing at LaborVoices. This confirms Estellés-Arolas &Gonzáles-Ladrón-de-Guevara's (2012) theory that material awards do not need to be the main motivational factor for participating in crowdsourcing, and that participation can be motivated by satisfying individual needs. These individual needs might be workers' feelings of being recognized because the information they share is being taken into account. A system like this might get such high appreciation from users because it successfully comes across as a platform where their voices are being acknowledged and heard.

Further, entertainment and gamification is a feature that can create incentives for workers to participate and use the systems. BFC and QuizRR use elements of gamification, by providing a quiz. BFC creates further incentives to participate by giving out prizes to a random selection of callers. The prices are for example rice cookers and mobile phones. These quizzes demonstrate similarities with gamification. Here, BFC uses "game elements in non-game contexts" (Deterding, Dixon, Khaled & Nacke, 2011, p. 9). As argued by Luminea (2013), gamification is a way to engage users. This is not only a design feature, but a valuable marketing strategy to keep users interested. Further, gamification can be used for behavioral change, as researched by Schoech, Boyas, Black and Elias-Lambert (2013). Applying game design elements into systems for education can be effective for reaching learning goals. The gamification creates an entertainment element that perhaps makes workers more interested in using the system. In addition to testing their knowledge skills, the prizes can create more incentive to participate. QuizRR puts much effort into the entertainment part of their system, producing videos that consists of acted out scenes, for example of a conversation between factory workers. The quiz which is provided after the training videos, give an extra entertaining element in addition to creating measurability of knowledge levels. Both BFC and QuizRR provides information on different topics first, and then measures knowledge levels through a quiz.

The findings also suggest that changing the content to suit the users' interest and skill level is part of creating incentives to use the systems. For example, BFC changes the questions in their quiz service to keep it interesting for workers to participate.

"*So normally we change the topics quarterly or sometimes once in six months depends on the current news of the worker and also based on the report. For instance, we generate the report quarterly and we see that the answer from the worker in Cambodian law most of them cannot answer correctly so we keep that topic there, but if we see majority or most of them got the correct answer, we switch to another topic. Or sometimes we design the question based on the current news*" P 2, Ly Sokheng, BFC.

The questions are changed when general knowledge level reaches a high level, and according to current events. The gamification element makes it possible to measure knowledge levels through the quiz, which makes it easier to update the system so that users are kept interested.

There are also elements that can create incentives for brands to use the systems. The findings pointed out that measurability was a key element. Having access to measurability of for example knowledge levels, or measurability of compliance with certain standards, can be communicated to brands as one of the main benefits of implementing these systems. Further, reliable data is central. Considering the unreliability of monitoring methods such as audits, as pointed out by for Greene and Mamic (2015), having reliable information is a benefit for brands.

The data also suggest that the systems, at least the for-profit ones, focus on cooperating with brands rather than exposing them. Even LaborVoices, who publicize their findings, do not specifically expose or brands publicly. QuizRR operates the other way around, by publicizing brands they work with, but not the results from their systems. So, it seems that some form of protecting the clients' information is needed to create incentives for brands to use the systems, and also importantly, pay for the service. Further, some elements to make brands motivated to implement these crowdsourcing systems are pointed out as business drivers in the conceptual model. These are, as argued, to protect reputation – done for example when LaborVoices do not expose brands to the public. Or on the other hand, done by QuizRR by publicizing who they work with, so that the brand can gain a better reputation for taking use of such services.

Further, using these services can work as a way for brands to be accepted in local communities, in other words, get a social license to operate (The Social License, 2017). Lastly, for brands to gain supplier accountability can be an incentive to use these systems. The measurability, and the reliable data that is easy accessible through the crowdsourcing systems can give brands new insights into their operations, being able to know the conditions of their suppliers.

To conclude, findings strongly suggest that it is necessary to recognize who the main user groups are, and how these are best reached. This means, if workers reach the system through mobile phones and outside factories, it is effective to use marketing channels such as radio ads, social media, direct community marketing and other channels based on the local context. If the system is more based on in-factory trainings, like QuizRR, marketing efforts are preferred to be heavily directed towards brands and companies. In that case, the goal is to make as many brands as possible to start trainings in their factories, which is a more top-down approach. QuizRR's strategy might in turn give less reliable data. However, systems like Outstanding Worker and LaborVoices are also suggested to implement efforts to market themselves towards brands and companies, as brands are one of the main users of their tools. The brands' interest in implementing this technology opens up for more data collection, and revenue.

4.3. Design components for worker empowerment

The second part of the model is the design. As demonstrated in the model, the design can affect what marketing should be focused on and target groups, as it affects *how* information is made available to workers, *what kind* of information is available to workers, and what kind of supply chain intelligence can be collected. In turn, this affect transparency towards the public, and consumer and stakeholder pressure. Which in the end can affect the final outcome: increasing the collective agency of workers.

From the data, the general opinion that emerged is that there are a lot of possibilities with technology. These results further support the Vodafone Group Plc (2013) report, demonstrating the benefits for workers in emerging economies. These possibilities are increasing as more and more people get access to better technology. Therefore, there is a lot of room for development and creativity, as has been argued by Bughin, et al. (2014). However, there are some components that can be seen as preferred to account for, based on

this research. First, the findings in this study strongly suggest that systems are designed so that they are available through technology that fits the local context. This means that the crowdsourcing tools in this research, and for this purpose, differ from the general opinion of what constitutes the preferred medium of crowdsourcing by previous researchers. As presented by Estellés-Arolas &Gonzáles-Ladrón-de-Guevara (2012), the Web 2.0 is the basis of crowdsourcing. However, with the purpose of connecting with workers, the medium should be flexible, to reach the desired crowd. If the system is meant to reach people in a community, outside factories on their personal phones it is necessary to consider whether these phones have internet connection, if they are smartphones, or basic feature phones. Second, it is preferred that the design is customized to overcome challenges of digital literacy and illiteracy. Same as with technology, if the main user group mainly use voice communication, then the system should also use voice communication. Third, having an information sharing function is central. It is preferred that the system is educational and can share useful information with the audience. Fourth, the system is preferred to be designed so that it can collect data. For example, measure knowledge levels, gather opinions through surveys, or record messages. Lastly, it is suggested that the system is designed so that it can be updated regularly and stay relevant to both workers and the brands.

The cases have three different designs. BFC uses IVR to share information on topics related to rights and responsibilities and offers a quiz on the relevant themes. QuizRR offers digital training videos on tablets with a following quiz. LaborVoices uses IVR to share a survey and share information about factory ratings, and other information they have collected, giving it back to the workers. These design differences mean that the type of data collected differs, and the way workers use the systems differs.

For the systems to have the best possible effect, an important aspect is user friendliness. As argued by Greene and Mamic (2015), there are some challenges that needs to be accounted for: Being user oriented and fit with the local context, costs of access, literacy, digital literacy, incentives for use. So, what does this mean and how has the systems accounted for these challenges? The data analysis finds that it is central for systems to have their systems available for any type of phone and using voice communication:

"Due to illiteracy, low education levels and the fact that the Khmer Unicode is not available on many inexpensive phones, workers generally do not use their phones for texting, but rather

calling. This meant that a program to communicate with workers would need to use an Interactive Voice Response (IVR) system" (Tucker, 2013a).

Unicode is the encoding of text, and the repertoire of available writings systems can differ between phones. Another reason for using voice communication, as argued by Islam and Grönlund (2011), is that texting is more advanced. However, access to mobile phones are widespread, and often shared between family or friends for those who do not have their own. As Castells, Fernandez-Ardevol, Qiu and Sey (2004) put it, the mobile phone has gone from being technology for the well-off few to becoming a mainstream property.

The system which is open 24/7 is automated and based on IVR which means the caller is asked questions, then has to press 1 for "yes" and 2 for "no". In some of their projects, workers can also leave an open-ended message and they can, as mentioned above, receive ratings and reviews on factories close to them. It emerged from the data that this automatic service is received as more trustworthy than hotlines and more effective than audits. The problems with hotlines is that workers don't trust them.

"What is established is that hotlines are not designed to build long-term relationships and rarely provide a channel to confirm facts on the ground with other workers. In private communications with us, hotline administrators in Bangladesh have expressed frustration. Workers don't use hotlines, they have said, because workers don't trust them" (Olmos, 2014).

The findings suggest that hotlines are not trusted because they do not give information back to workers, only receive their grievances. In addition, it was found that the automatic service of LaborVoices was experienced as quicker, and more likely to be reported to key decision-makers. As with audits, workers might feel intimidated to talk about problems, or perhaps a manager is watching. As argued by Jill Tucker:

"Auditing is sometimes a cat-and-mouse game, with factory management going to extremes to fool monitors by hiding problems and coaching workers. Even in the best of cases, high-quality audits are designed to identify problems, not to resolve them. Without effective enforcement, audits can be used to absorb and deflect attention rather than ensure that changes are actually made in factories" (Tucker, 2013b).

Her statement is in line with Greene and Mamic's (2015) argument that audits are not doing a good enough job improving conditions in factories. So, the ability to call in anonymously, at any time, inside or outside the factory and have your information stored automatically with the ability to receive information back is key to creating a trustworthy system. New media tools challenge the traditional method of monitoring factories (audits) by offering workers opportunities to be involved. However, Tucker also points out the importance of enforcement. Also with crowdsourcing tools, problems might only be identified and not solved. After all, there are limits to the possibilities of communication tools if effective law enforcement mechanisms are not in place.

Outstanding Worker and QuizRR base their data collection on measuring workers' knowledge level on different topics. Both systems use information sharing and quizzes. An advantage of these two designs is that the quiz contributes with a form of entertainment. In addition to learning, the workers can measure their knowledge by playing a game. QuizRR however, has digital trainings inside factories. The anonymity is removed from QuizRR's system, as the workers are using it in their workplace, perhaps as they are surveilled by managers and local digital training staff. Compared to Tucker's (2013b) argument above, the in-factory training does stand between the worker and the reporting system. However, the system is not designed to pick up reports like LaborVoices' system. It is designed to measure knowledge levels and educate. Thus, the advantage of this system is that the workers get training on rights, responsibilities and so forth. In addition, they get digital training as QuizRR aims to overcome possible barriers of digital literacy.

"We have worked on making it easy to understand and use even for someone who has never held a touchscreen before" (Sofie Nordström, co-founder QuizRR quoted in Wolf-Watz, 2015).

QuizRR tries in this way to account for low digital literacy by focusing on teaching skills that enable people to successfully use technology. However, if workers need training to even use the tool – is tablets the right technology, and the in-factory training the right approach? As previous research has brought to light (Delaney & Connor, 2016; Chen, 2013, Chen, Zhang & Zhou, 2015), factories are characterized by a high pressure to work efficiently. Workers can for example be forced to work overtime, and perhaps short time for breaks. The objective for factory management seem to be to produce as fast and as much as possible. To meet demands

from brands, they also often hire workers informally to take some of the workload (Stotz & Kane, 2015). Looking at this situation, it does not really seem like there is room and time for workers to take breaks first to learn how to use tablets if that is necessary, and then to take more time for digital training. On the other hand, if these trainings are conducted, it might help close digital divides (Hilbert, 2011). In addition, it might empower women in the workplace, as argued by QuizRR:

"(…) *We are happy to say that our new Worker Engagement application has already reached 865 female workers in China and Bangladesh! The Worker Engagement application, focusing on improving dialogue and engagement at the workplace, providing knowledge on women's right to organize themselves to create better work conditions, is expected be rolled out in more factories during 2017*" (QuizRR, 2017c).

However, one cannot know if women are given the same privileges as men, and this in turn can create an even bigger divide (Hilbert, 2011). And is using less accessible technology like tablets, getting in the way of trying to solve bigger issues? It seems that QuizRR's tool can be time consuming, and might not be as effective as they aim to be. Is it realistic to expect that factory managers will make time for digital training, when they might be busy enough as it is to meet production demands from their customers? On the other hand, this might be what the training will achieve if it works as QuizRR aims it to.

It seems as though QuizRR has locked their system to a hardware that is limiting. However, clients argue that the tablets are efficient because it is flexible:

"*Training is carried out on tablets that QuizRR provides and is based on customized films about worker's rights and obligations. Factories don't have to worry about lost production time since the tool can be used at any time and in small groups or individually*". (Axfoundation, 2017).

However, this is not necessarily the case. If a worker is doing training, even if it is on a tablet, the worker must stop working for that amount of time. This is lost production time. Further, the in-factory training might inhibit the workers from feeling completely free in how they use the service. From a management perspective, the solution is a favorable alternative to for example lectures on factory safety:

"The quizRR tool is flexible and convenient, it is different from traditional training. For our suppliers QuizRR is fun and very easy to use, training results are good too". (CSR Manager, Axfood China quoted in QuizRR, 2017).

For this study, there has not been enough worker feedback available to find whether it is received as entertaining, relevant and educational. This can be further researched, by finding the general opinion among workers on QuizRR's tools. The digital trainings that QuizRR offer are targeted towards workers as well as management level employees, so it offers a training that includes people in different positions in the workplace. This might reinforce the positive effect as more people in the same workplace learn the same skills and have the same knowledge. This aspect shows an effort to account for the challenge reported by Chen (2013), that workers are subjected to unfair treatment by managers. QuizRR accounts for this by focusing on the relationship between managers and worker, focusing on training of management as well. However, as discussed above, this study questions whether the tool is realistic. Will factory management take valuable production time and spend it on trainings? According to QuizRR's websites, there are so far 124 factories using QuizRR, and 23 404 people have partaken in trainings. Although the conditions in these factories are not known to this research, there is the possibility that these trainings are not carried out by workers in the worst forms of "sweatshops" (Doorey, 2005, p. 355). The findings suggest that the users of QuizRR's training tools are mainly carried out in more upscale factories, for example in China.

"It's not as easy to get people to work in factories in China anymore and they see this as a way to become more attractive employers" (Sofie Nordström, co-founder QuizRR quoted in Wolf-Watz, 2015).

Findings in this study suggest that QuizRR's tool is designed to make factories more attractive, which indicate that its design is also developed to suit management level users.

"By using the QuizRR training solution factories can strengthen the factory-brand relationship and create long term business relationship with global brands, while at the same

time become an attractive employer for workers and thereby strengthen the factory reputation" (QuizRR, 2017d).

This indicates that the design of the tool is created so that it can create better reputation for factories and brands. However, this might mean that some of the objective of increasing the collective agency of workers might get lost. The findings give the impression that the trainings are driven by brands and factory management, for it to seem like it is implemented to empower the workers. The little transparency into the results of the QuizRR tool makes it difficult to argue that this tool is working with the aim of empowering workers. QuizRR, brands and factories might be able to report to the public and to workers that they are working to solve issues. However, it might not make effective changes. It might work more as an illusion. Factories and brands can gain better reputation because they have implemented trainings, but no more specific information is given on what they found, who learnt what and what has changed.

LaborVoices' tool is based on crowdsourcing information from workers through mobile phones, as described by the company's CEO:

"Symphony crowdsources information on working conditions directly from workers via their mobile phones, both inside and outside factories, and then pushes ratings and reviews on factories back out to workers about the best employers in their area". (Gill, 2016):

This quote sheds light on how LaborVoices work as an internal reporting system. Workers have access to relevant information so they can make informed decisions, for example when finding a place to work. The workers report in how well factories are doing in terms of wages, sanitation, fire safety, if there is abuse, or child laborers. LaborVoices pick up this data, analyses it and sends it back to the workers. In addition, the information is sent to brands – so that if there are serious issues, they can make changes. Whether this internal reporting channel works well depends on brands' willingness to make use of the data collected by the crowdsourcing service and actually make changes. Near and Miceli (1992), Dworkin and Baucus (1998) argue that for internal whistleblowing to be effective, the organization needs to be open to change. However, if the organization is not open to make changes regardless of what is reported, then external whistleblowing is more effective. This suggests, that if the brands are open to make changes and make use of the data they are receiving through

crowdsourcing systems like LaborVoices, then an internal reporting system can work well. In addition, it seems that the fear of public shaming is part of what makes brands engage and use crowdsourcing systems like these. Hence, LaborVoices does not necessarily need to act like a channel for external whistleblowing. Public shaming does not need to happen, but it exists as a driver for brands to use LaborVoices' services.

However, if brands are not taking action on solving the issues that are reported through the crowdsourcing system, external whistleblowing is an effective tool to put pressure on organizations to respond. This is further supported by Dworkin and Baucus (1998), claiming that going public can engage media, government and consumers. This creates a pressure on brands to take action as they are facing a threat to their reputation. In the end, it is easier to ignore complaints in internal channels than public shaming.

4.4.   Which design features to consider for brands?

This study suggests that, for brands, the most important aspects of the systems design are measurability. This can be for example measurability of knowledge level on the themes presented in the system. In addition, great emphasize was put on scale throughout the data, focusing on the data collection as efficient and reaching a high number of people. In addition, the findings call for automatic systems open for use at all times. Further, the automatic systems support a continuous stream of data collection and real-time information. This way, the information is available to be acted on and measures can be taken to avoid dangerous situations and to solve problems. Lastly, it is seen important that the data is verifiable, and gives the possibility to confirm that the information collected is correct. An example of doing this is how LaborVoices double checks questions on child labor, by asking if the worker can confirm their answer after reporting on having seen children in factories. In addition, they call back a sample of workers who have reported on for example child labor asking if the information they gave was correct.

"For particular questions, that are particular like sensitive questions things like under aged workers, or that sort of thing. Then we'll typically follow up with sampling the worker population so going back to workers who already answered the automated survey and giving them a manual, you know giving them just a personal phone call and asking them a few follow up questions just to make sure that we know that they understand the question, you know to kind of check on that" P 3, Kohl Gill, CEO LaborVoices.

It might seem very important to keep workers anonymous, as they might be vulnerable and victims of abuse. However, non-anonymity makes it possible for the systems to confirm complaints. Being non-anonymous does not mean that their names will be given to factory management. But rather non-anonymous in LaborVoices' internal system. When the workers are not anonymous, LaborVoices has the possibility to call a worker back and ask what they say is really happening. This in turn makes the reporting more legitimate and credible. These findings support the idea of Near and Miceli (1995) on the effectiveness of non-anonymous whistleblowers. According to Near and Miceli (1995), if a whistleblower is anonymous, it reduces his or her credibility. However, there is a need to protect workers from abusive managers. Workers reporting on factory conditions may experience retaliation if their local managers knew about it. However, being known by LaborVoices does not seem to be very risky. The crowdsourcing system protects identities from local managers and others who can be a threat to workers, but has the possibility to contact workers to validate complaints. This ability to confirm complaints that have been reported by workers are beneficial for brands, as they can be certain that these problems are real. However, as mentioned previously, whether the brand will make changes depends on the brands' openness and willingness to change.

The choice between internal or external whistleblowing affects the brand as well. As mentioned before, external whistleblowing can put brands under public scrutiny. External whistleblowing or publicizing of data that shows non-compliance, might be taken as airing a brands' dirty laundry in public. The publicizing of their operations and issues can make the media, consumers and outside stakeholders more engaged in their operations. This in turn puts pressure on the brand to treat allegations as legitimate and respond to them. After all, it is easier for a company to ignore complaints if they are only shared internally (Dworkin & Baucus, 1998). Based on previous research and findings in this study, it seems that it is more appealing for brands to use crowdsourcing systems that can ensure internal sharing of information. This way, they are able to get information about compliance issues in time to make changes before accidents happen, without the public putting pressure on them, or harming their reputation.

To conclude, there is room for creativity and development design-wise, as more people are getting access to and learning how to use more advanced technology. However, some central components are advised to be considered and implemented into the design. Most of these

relates to the user friendliness for workers. Also, considering the tools' dependency on financial streams from brands as clients, it might be higher demand for a system that works with internal reporting than external whistleblowers. However, if there is need to further push brands to take action on certain issues, crowdsourcing tools like LaborVoices could act as an external whistleblowing channel. In this case, it is necessary to decide what the crowdsourcing systems' aim is: loyalty to brands as clients or loyalty towards the workers as users? It also must be considered what will make the most long-term social changes.

4.5. Sharing information with workers

The data analysis found that the most important effect of the crowdsourcing tools is their ability to share information and educate workers. In the conceptual model, the information sharing with workers has been placed centrally with a direct link to worker empowerment to emphasize its significance. When looking for similarities between the three systems, the information sharing feature is the most substantial similarity. All three cases have focused on information sharing as a central part of their design.

Considering that information sharing is such an important part of the tools, it is necessary to ask what kind of platform is best for this aim. The only crowdsourcing system in this study that has reported that they use Facebook, is BFC. They use Facebook as an additional platform to share the same information that they share through their call-in system.

"Facebook is the biggest social media channel here. What Sokheng does for us every week is also to update one to three messages everyday under labor law, their rights responsibilities, trying to (...) message it more positively about their rights and it's through this kind of feeding information constantly and regularly we try to also change their knowledge base and to know their rights" P 2, Sara Park, BFC.

Considering this, it might be more effective to go where the users are, namely Facebook, instead of trying to make them use a completely new system. According to Digital in 2017 Global Overview, monthly active social media users are highest in the world in East Asia, South-East Asia and South-Asia. India, Indonesia, Philippines, Turkey, Thailand, Vietnam are among the top 10 countries with the largest number of active Facebook users. Dhaka, and the surrounding area, have 22 million active Facebook users. According to the Asia Foundation Bangladesh is the second leading garment exporter in the world with most of the factories in

and around Dhaka. The amount of active Facebook users worldwide, and Facebook users in countries that are big garment exporters underlines that this social media platform can be worth using.

This information suggests that the countries, and cities, where many people work in the apparel industry, are also countries with considerable amounts of active social media users. Thus, there is reason to wonder why the crowdsourcing tools in this study, with the exception of BFC, has not made better use of Facebook. It seems like crowdsourcing tools could benefit from sharing information through social media. Using Facebook for information sharing could enable them to reach more people, as well as using video and pictures to educate workers. Facebook could be used for carrying out informative campaigns, while their call-in systems could be used to anonymously report non-compliance issues. In addition, social media campaigns could increase their visibility and be used as an effective marketing tool. As argued by Saravanakumar and SuganthaLakshmi (2012), Facebook is destined to bring in customers and is a valuable marketing platform.

There are some implications to consider when it comes to what type of information to share through these crowdsourcing tools. First, the themes that are shared with workers and the questions that are asked determines two important things: what kind of supply chain insights are created and how it can benefit workers. Therefore, the second implication is to conduct extensive field research and testing of topics and questions to understand what to ask and what workers are interested in knowing. Information that is shared can be divided into two different types. First, information about rights and responsibilities, and second, the tools for how to use this information to solve situations. This can be for example negotiation training or how to elect worker representatives in factories.

The finding that sharing information part is so central for empowerment, is backed up by development communication theory. Schramm (1979) argues that the medium should inform, instruct and facilitate participation. Which these systems have been found to do by educating, giving instructions for how to communicate and solve problems with dialogue, and being accessible through available technology. As claimed by Choudbury (2011), development communication is about participation on grassroots level. The aim is societal change and fostering development (Rogers, 1976), and the people whom are meant to experience this change should be included in the communication.

This research was expected to evolve mainly around open-ended comments that workers had reported through different systems. However, findings indicate that the most important element might not necessarily be to collect grievances from workers. Instead it is suggested to be more important that information is shared with workers. This way, workers can learn about their rights and responsibilities and use this information to solve problems themselves. If workers' comments are only gathered into the system, it might create an expectation that someone will come and fix the issue. While if information is shared, it gives workers tools to solve it themselves.

At the same time, developments of legislations are putting more pressure on brands to make them take action and solve issues as well. For example, the UK Modern Slavery Act, recognizes international corporations' role in modern slavery (Deloitte, 2017). The legislation comprises corporations with activity in the UK, over a certain turnover. The legislation requires these corporations to disclose which steps are taken to ensure or counteract slavery and human trafficking from taking place in their supply chain. This must be signed by board of directors and must be publicized on the corporations' websites (Deloitte, 2016). These types of legislations are important to make companies accountable and take responsibility for their business operations. For brands, this type of crowdsourcing system might be one of the steps they can report having taken to counteract exploitation of workers.

Thus, an important part of the systems is found to be which topics are put into the surveys, quizzes, videos, and voice message information. The topics that are put into these systems determine what kind of information the worker gets and what kind of information the system is able to gather. Several topics emerged as important, however after the analysis, it is found that they can be divided into two groups: 1) rights and responsibilities, for example maternity leave, wages and fire safety. And 2) methods to use the information, for example negotiation training.

4.6. Finding the right topics

The three cases focused on overlapping topics. From QuizRR's system, these are Worker Engagement including dialogue and communication, worker representation, nomination and election, and roles and responsibility. And Rights & Responsibilities including workplace practices (like child labor, unions, wages), health and safety, and fire and building safety.

LaborVoices focuses on wages, cleanliness, time off, fire safety, abuse, child labor and worker recommendation as well as human trafficking and recruitment processes. Outstanding Worker focuses on salary and allowances, occupational health and safety, and annual leave. In addition to maternity leave, and annual leave. Comparing these with the ILO conventions, the systems all focus on all or parts of the basic principles presented by the ILO. These cover freedom of association and collective bargaining, forced labor, child labor, equal wages and discrimination in employment and at work (ILO, 2017). From what one can see, the ILO conventions form the most important issues, especially in the footwear and garment sector which is mostly represented among the workers using these systems. What is interesting, are the topics maternity leave, annual leave and time off. These can be categorized within wages, forced labor and discrimination – but give more tangible detail level information. In addition, cleanliness, health and building safety represent issues that workers themselves experience every day and issues that they might solve if given the right information and tools.

What is equal in all three systems is that the design of the tool decides which data is collected. This underlines the need for the tools' developers to do research on what is important for workers to share, what the biggest compliance issues are, and what information is useful for brands. These three aspects might differ – and it is essential for the designer of the tool to understand what topics should be prioritized. The cases in this study have put effort into designing questions and researching what should be asked and shared with workers.

"*We have worked on these questions for ten years*" (Sofie Nordström, co-founder QuizRR quoted in Wolf-Watz, 2015).

Further, BFC use local focus groups to understand the workers and what kind of topics they would want and need to learn. LaborVoices also conducts field research, having focus groups, in-person surveys and interviews which they base their surveys on.

"*So, we test a lot of questions in the field, we ask workers, you know uhm in in-person surveys, some of these questions we also ask them what kind of information they would want to know*". P 3, Kohl gill, CEO LaborVoices.

Thus, it is found that research is necessary to unveil what is the most prominent problems that needs to be addressed. An example of this is LaborVoices field research on human trafficking

including experiences with recruiters, threats of violence, and deprivation of personal documents:

"So now we're starting to gather a bit more data on that and I think we've shown a statistically significant uhm segment of workers are actually experiencing elements of human trafficking in the apparel supply chain. Which I think most people didn't really, didn't really know before.". P 3, Kohl Gill, CEO LaborVoices.

However, it is not a given that available information will change brands' attitudes or actions towards exploitation of workers. Referring to the critique of the information deficit model (Dickson, 2005), overcoming the knowledge deficit does not necessarily change attitudes or actions. In other words, exploitation of workers is not solely caused by brands' lack of information about the exploitation or how to end it. The root cause of worker exploitation is more likely a strong drive for brands to make profit. So, no matter what type of information is made available, and how this is communicated, it will not solely and by itself end worker exploitation. However, factors like the risk of public shaming and reputation damage can create a willingness for brands to make improvements. These improvements can be possible to make when the right information is available. Thus, collection and sharing of accurate information on working conditions contributes to the process of making improvements.

4.7. Negotiation training for problem solving

Education and information sharing can be a form of empowerment and protection against exploitation, by enabling workers to avoid or solve problems without the involvement of others. QuizRR focuses much of its training on negotiation, dialogue and communication, educating the workforce on how to solve problems independently. It also emerged from the data that this type of training can be a useful way to avoid disputes.

"Most of the workers we're dealing with have never had any negotiation training. They expect verbal and sometimes physical abuse from their employers, and by the time they get to a point where they must assert their needs the only way they know how to assert it, is through violence. That in-between zone doesn't exist, where a worker asserts her rights and then expects some kind of positive response" (Kohl Gill, quoted in Hess, 2016).

This underlines the importance of educating on communication methods. This way, workers and factory management can solve issues in the workplace by negotiation. According to the data, one problem has been to influence the existing factory culture in Asia where brands source form. The information sharing, and the communication tools provided through these systems might be ways to change a possible negative culture in factories.

"Workers endure low wages, long hours and unexpected changes in daily schedules. Even more, in most societies that are home to low-wage garment factories, workers are culturally discouraged to complain when working conditions are trying – especially if you are a woman. Unfortunately, those cultural barriers and lack of communication channels have often been costly for factories. (Evidence suggests that Rana Plaza could have been avoided if factory management had listened to worker concerns.)" (Gonzales, 2014).

On the other hand, communication tools cannot solve these issues if there are no mandatory regulations against violating rules of humane treatment and there is lack of enforcement resources. According to the ILO (2017), labor laws and conventions are created and reported to be in force. However, a vast number of workers are working in the informal economy. According to the ILO (2017), about half to three-quarters of all non-agricultural employment in developing countries is part of the informal economy. According to Stotz and Kane (2015), informal workers are not recognized by law. This means that even if labor laws are set in place to protect workers, these do not apply to the informal workers. Complex supply chains make it difficult to know whether workers are in the informal economy, as formally registered factories can subcontract to informal workplaces (Stotz and Kane, 2015). So, with access to information and negotiation training and regulations and laws in force, many workers basically have no use of it because they have no rights. Thus, the communication platforms might not be able to contribute to solve problems for workers not recognized by the law.

To conclude, this research suggests that the most important part of the systems is not what information they gather, but what they offer to share with the workers. The findings strongly point to that it is beneficial if the topics consists of both facts and information, and tools for communication. What type of information is shared seem to also represent the type of system, and give an idea of their strategy for solveing industry compliance issues. However, the issue of informal workers not being protected by law, present issues that seem hard or impossible to solve with a communication platform.

4.8. The main aim: worker empowerment and compliance improvement

Through this research, it is found that the empowerment of workers is the core objective of the three crowdsourcing tools. This is reflected in the model, by placing "worker empowerment" in the very center. However, the brands are also receiving benefits by using crowdsourcing systems, that are not directly linked to worker empowerment. For example, using the tools can be a way to receive positive attention in the media, creating a better reputation. In addition, corporations that are affected by the UK Modern Slavery Act 2015, might use tools like this merely to show that they are taking steps to ensure slavery free supply chains. However, this does not necessarily mean that they have taken steps to solve issues that have been reported through the system. Further, an increased focus on communicating corporate social responsibility practices, can influence corporations to make use of services with no other aim than to use it for good PR. Or, as argued by O'Connor and Shumate (2010), "CSR communication may be used to make a corporation indistinguishable from its peers, thereby reducing the likelihood of being uniquely targeted by activists" (p. 546). On the other hand, having companies paying for the services of the crowdsourcing tools do contribute with keeping the systems sustainable long term. In turn, this can be positive for the workers.

Findings indicate that in the situations where workers cannot find the solutions, the tools itself give information on who to go to. The systems can work proactively to help avoid issues, even issues such as human trafficking in recruitment processes. Teaching workers to see the signs of trafficking, learning how to avoid it and which factories to avoid, can create big positive impact to the fight against human trafficking and illegal recruitment processes in the footwear and garment industry. The same goes for how to solve a situation with an abusive supervisor. For workers to know what is legal and not, and then who to turn to to report the issue in addition to knowing how to create a dialogue can create positive change.

It is found that it is essential to understand that many issues are not possible to solve only with communication tools, but that the crowdsourcing systems can make a positive contribution. An important aspect is seeing workers as a group that can contribute locally to change their own situation. The findings strongly suggest that if brands see an importance in taking use of these systems, they can fuel the systems' existence by paying for the service. Further, they can use the information to improve their own supply chain, communicate to the public that

they are taking action and put pressure on other brands to do the same. It emerged from the data that the systems focus on their function as a business tool:

"We are out to prove that what is good for the worker is also good for business" (Olmos, 2014).

This quote pinpoints what Brabham (2009) argues; that technology is a tool that can create deep levels of engagement between people and institutions and governments. For the workers, communication technology can have socially emancipatory effects, as argued by Thigo (2013). With these systems, as indicated by Thigo (2013), it is possible to facilitate new collective action by giving a voice to workers, and challenging the existing distribution of power by giving workers access to tools that can be used to improve their work situation. Having access to information and being able to report on major issues, is the key feature of these crowdsourcing tools that enables worker engagement and let workers organize to solve issues by using both information and negotiation skills. This possibility supports Brabham's (2009) view on crowdsourcing as a model for engagement and creative problem solution. However, it contradicts Brabham's (2009) focus on the Web as the main platform for engagement – as found in this research, the crowdsourcing systems still have possibilities to engage, bring together workers and find creative solutions (Brabham, 2009), without primarily using the Web for communication.

4.9.   Supply chain intelligence: real-time information to brands

Another function of the systems is that they create transparency in supply chains. This means that brands are able to understand what is happening in their complex supply chains, having better knowledge about working conditions. Possible exploitation of workers is made visible to brands, and the results from this study and previous research emphasize that supply chain intelligence, or supply chain transparency, is a positive element that can help improve conditions in supply chains. Aaronson and Wham's (2016) research demonstrates the current high focus on financial transparency and financial insight in companies. Compared, there is low focus on transparency in production conditions.

Doorey (2005) claims that there is a lack of transparency regarding corporations' operations, and that many corporations refuse to give out information about working conditions.

However, the issue might be more complex than refusing to give out information, there is the additional problem of not having any information to give out:

"I'm the first to blame big corporations for just about anything, but when we look more closely at the issue it becomes apparent that Gap and Walmart don't actually know who is producing their products due to the majority of the work being sub-contracted into anonymity. LaborVoices' system is going to make it more difficult for big retailers to not know what's going on in the factories where their products are being made" (Corl, 2014).

And it might not even be about the brands' lack of moral – without these types of systems it is just too difficult getting access to that sort of information:

"Like with most things it's a nuanced answer. I think it all starts with visibility. The average global brand, even with the best intentions, simply doesn't know enough about their supply chain" (Ayush Khanna, COO LaborVoices, quoted in Benz, 2016a).

And even if a company do feel inclined to ensure ethical production, sourcing from factories with fair treatment of workers and safe conditions, the systems are first of all a business tool:

"At the end of the day, brands need to not only do this out of the kindness of their hearts, but [they] should be doing this because this is actually good for business" Ayush Khanna, COO LaborVoices, quoted in Gonzales, 2014).

Using crowdsourcing systems to get information about supply chains can save brands a lot of money. Brands' problems are solved by solving the workers' problems. In addition, once data is being collected continuously, brands can no longer sit back and make excuses based on the difficulties of knowing:

"It's definitely valuable as an educational tool for workers," says Better Factories Cambodia consultant Maeve Galvin. *"But it's also refining our knowledge of what workers know and what workers don't know"* (SciDevNet, 2014).

4.10. Stakeholder pressure and transparency towards the public

The model demonstrates that supply chain intelligence can lead to stakeholder pressure. It emerged from the data that if brands are disclosing information about their operations, external sources can create and increase pressure on brands to continuously improve sourcing operations. Seeing that some brands are implementing such a system in their supply chain, it can make stakeholders pressure more brands to do the same. In addition, it can create pressure on companies to continue using the systems, with stakeholders expecting that they continuously share their intel and show that they are working towards better working conditions. This pressure can fuel more investments going into the systems, and that the systems become sustainable businesses that can grow and improve their work, reinforcing the positive loop of worker empowerment, brand compliance improvement, and industry transparency. In addition, conditions in factories and possible exploitation of workers is made visible not only to the brand, but to the public and consumers which are purchasing the products.

The public transparency, meaning giving information to consumers, NGOs and other interested stakeholders – how will that influence worker agency and brand compliance? As shown in the model, this kind of transparency, to the public, is one of the drivers for increased pressure towards companies to keep releasing data, which means keep collecting data, which in turn means keep using the services, improving them and create long lasting projects where the workers' rights are in focus. The reason for using crowdsourcing tools does not necessarily need to come from a CEO's selfless ethical moral, as mentioned above. It might as well, and more likely, come from outside pressure – making a company realize that these tools are good for business. Both in terms of staying on top of issues before something damaging happens, in addition to gaining a better reputation from the public for taking action, and cleaning up their supply chain. The findings suggest that if consumers are given information on brands' compliance, they can help pressure brands to work on improving their business operations:

"Public disclosure empowers citizens to make informed decisions and influence those in power. Yet the public generally knows little about conditions in the factories that produce our clothes. We don't know which factories are doing a good job of taking care of their workers and which are failing to provide even minimum standards of cleanliness and safety". (Tucker, 2013b).

Further, it was found that the consumers' power to affect brands' operations decisions are positively linked to workers' safety. In addition, higher standards to for responsible production can be affected by legislation. An example is the UK Modern Slavery Act 2015 which recognizes corporations' role in modern slavery, as mentioned earlier in this chapter. The legislation also demands corporations to publicize their efforts, which in turn makes it more available for consumers. More companies are also taking steps to ensure their consumers that they are working towards better conditions, by for example releasing their supplier lists.

"Technologists such as myself are especially excited about the space opening up between the consumer side's call for transparency and the production side's burgeoning standards and requirements. The dual demand increases the potential for ensuring garment workers' overall safety" (Krasley, 2014).

On the other hand, as argued by Doorey (2005), the solution may not be to share raw information about conditions with consumers. The reason for this is that the average consumer does not possess the knowledge on what standards are appropriate or not – having little knowledge if the information that brands share should be interpreted as positive or negative. However, this is challenged by findings in Baack's (2015) study, that raw data should be made available to the public to create more transparency and include the public in decision-making. This way, the public can create their own opinion of public issues. Though, for this to achieve this type of process, there needs to be an interest in the public to assess and interpret this data.

Considering Doorey's (2005) arguments, there are other stakeholders that might be a better audience for this transparency than consumers. A more effective pressure might arise if brands are publicly compared and ranked on transparency. In this way, the brands pressuring each other into creating a climate of disclosure. When asked whether workers should be more visible to consumers, Jill Tucker, former Chief Technical Advisor for BFC argued that consumers might not be stakeholders with the most impact. Instead, she gave an example of published lists that compare brands on their transparency:

"The fact that this information about 100 brands will go public and they will be ranked, there will be a number one and there will be a number 100. Now even the number one may have a pretty low score, but they may be the best out of 100. Motivating the brands to make changes. So that isn't making workers visible, but it's making brands more accountable to the public. So, I'm not sure if the key to making changes is making workers more visible, sometimes it's making the brand practice more visible". P 1, Jill Tucker, former Chief Technical Advisor BFC.

This argument is supported by Doorey's (2005) and Aaronson and Wham's (2016) arguments on regulations on transparency. The aim being a climate where companies share information, and then other stakeholders, like consumers will find this positive and expect even more of it.

"Having a single, worker-powered data source puts brands, suppliers and workers on the same page. Workers can choose the best factories. Brands can get early access to the data to stay on top of issues before they are made public. Factories that treat their workers fairly get the recognition they deserve" (Ayush Khanna, COO LaborVoices, quoted in Benz, 2016b).

4.11. Confronting data ownership

This leads to an idea shared by CEO of LaborVoices, Kohl Gill, on how data ownership caters to either the workers or the businesses. Considering the overall aim of these systems, they are supposed to be of mutual interest for both workers and companies; solving problems. However, a sensitive matter is: what should happen with the data once it is collected? In an interview with Kohl Gill, he expressed the importance of considering data ownership when looking into these crowdsourcing systems. For how is it decided what kind of data is collected, and what happens to the data after it has been collected? The data ownership differs between the cases in this study. QuizRR has a high focus on brands and published which brands they work with and which factories has implemented the training, however the results of knowledge level and satisfaction with the tool is not published. BFC publicized their data as long as they had funding to do so. As mentioned earlier, LaborVoices publishes reports with factory rankings. They further emphasize the need to be independent so that they can decide what to do with their data:

"Because if anybody else owns that data, you cannot share it, you cannot do these kind of publications that we did. (...) So you really need to have an independent body to do that and

that body cannot be sort of beholden to corporations, factory management, or government or whatever and to some extent I think that's one of our big advantages. We have been connecting with these workers on our own, we own every bit of data that we've gathered, we can publish it if we need to, we can send it back to workers if we need to, we can anything we need to do, we can do. And that's critical" P 3, Kohl Gill, CEO LaborVoices.

This finding relates to Swire's (2012) freedom of association and data empowerment. By using data that is obtained by the crowdsourcing systems in this study, there are positive outcomes. Workers can express opinions, reach others, and inform about experiences and conditions in their workplace by sharing their personal data. The benefit of using the data outweighs the brands' rights to privacy. In addition, the benefits of data sharing outweigh the risks of sharing information about the workers. So, it is worth arguing that the public and the workers have the right to data sharing. The reason for this being that perhaps more good can come from using the data, than from limiting the access to it.

LaborVoices' reasoning is supported by Chen, Zhang and Zhou (2015), who also focus on the negative sides of the current low transparency and self-reporting happening in the industry. According to Chen, Zhang and Zhou (2015), the monitoring and regulation of the supply chains are done by governments, companies themselves (self-regulation) and NGOs. And even though accidents like the Rana Plaza collapse go public, supply chains are so complex that information on violations are not publicized. Chen, Zhang and Zhou's (2015) arguments emphasize the way in which companies seem to be getting away with exploitation of workers because there is not enough information available. As suggested by the findings, if this information is not owned by the brands they risk public scrutiny if the crowdsourcer decides to be a whistleblower.

"By building a functional feedback loop, it makes it significantly harder to ignore practices and history". (Wadhwa, 2016).

On the other hand, protecting the brands might be important to keep the systems going. As the example presented by Swire (2012), copyrights holders seek to limit data sharing. At the same time, individuals seek to access this data. In this case, brands are seeking to limit the data sharing, because the information can contain sensitive data about their operations. On the other hand, as argued above, the public needs access to this information to understand the

conditions in the industry. If companies are too scared of being outed to the public for incompliance, they might not want to be using the systems at all. If implementing these systems in their supply chains means public information, it might be too risky for their reputation. And who will fund the projects then? Based on the data from this research one can argue that the independent data collected from workers is crucial to inform the public. On the other side, a system is still empowering by educating workers on their rights and responsibilities, without functioning as a whistle blower but as a proactive tool working for workers' and brands' interests at the same time. These findings contradict, but represent the dilemma of what in the end is the best practice. Another suggestion is to have workers being involved in the decision for how the data should be used, as suggested by Doorey (2005). However, based on the findings in this study, the strategy needs to be nuanced. Emphasis on protecting brands can compromise worker empowerment and development of working conditions. On the other hand, aiming to publicly shame companies and only pointing out problems can be destructive for positive cooperation and development.

So, how the system is designed to use its data affects which stakeholders it appeals more to. A system like LaborVoices who publicizes information on factories and their ratings and holds data independency in high regard, can help put pressure on brands in the public eye. Their system is valuable for brands, but puts the workers first. On the other, side QuizRR focuses on brands and publicizing positive information on training results connected to themselves and the brands, puts the brands first. Which approach is more effective in improving working conditions and empowering workers has not been identified through this research, but is worth looking into in the future. A climate for disclosure can be formed, as suggested by Doorey (2005). This climate can be created by pressure from other companies, like suggested by Jill Tucker on ranking companies' transparency levels. This culture of transparency can make companies see the benefits of using crowdsourcing systems to understand what is happening in their supply chains: for avoiding crises, saving money, being more ethical and responsible, and not losing workers to other factories (decreasing turnover).

To conclude, transparency means insight into a company's own supply chain. In addition, transparency means that a company is showing the public their operations. Transparency towards the public helps putting pressure on brands in the industry, and can create healthy competition to take action towards more ethical production and decrease exploitation of workers. Contradictory to Doorey's (2005) apprehension, it does not need to be costly and

difficult to track production chains, due to new crowdsourcing systems reaching thousands of workers at the same time.

4.12. Conclusion

The conceptual model represents how the systems function, and how each of the parts contributes towards what is found as the main objective: contributing to empowering workers. Findings strongly suggest that marketing efforts are to be directed towards the right user groups, with focus on workers, factory management and brands. Both organizations and workers can benefit from mobile technology; workers can increase their knowledge on important and relevant issues for a better work life and brands get access to measurable information from the workers. However, it is necessary to underline that a communication tool does not serve as a sole solution to end exploitation of workers. Other factors play in as main factors, for example, law enforcement, and legislations that make companies responsible for their supply chain operations. However, factors like these can also push brands towards using crowdsourcing systems. These are represented in the model as outside factors; business drivers and enforcement mechanisms. Examples of the business drivers are reputation threats, and supplier accountability. Enforcement mechanisms can be regulations for public disclosure, the UK Modern Slavery Act 2015 is one legislation which requires this (Deloitte, 2016). Findings also indicate that there is room for creativity and development in the design of these systems. One important finding is that there is room for taking more use of social media, especially Facebook. Further, design is a central element – and findings suggest user friendliness is a core design objective. However, a relevant question is if one should rather use social media channels where workers are already users, than to provide new platforms and try to make workers use these. When it comes to empowering workers, it is found that the most important part of the systems is what the tools offer workers to learn. The findings strongly point to that it is beneficial if the topics consists of both facts and information, and tools for communication. Further, transparency towards the public helps putting pressure on brands in the industry, and creates healthy competition to acquire supply chain intelligence. This pressure fuels the need to continue using systems like the ones studied here. However, transparency can also scare off clients and make them less interested in using crowdsourcing systems. It seems that it is necessary to find a balance where the data is used to hold brands accountable, but still offer some kind of protection to reduce chances of public shaming.

5. Conclusion

This study has researched the phenomenon crowdsourcing, specifically crowdsourcing tools for factory workers. It has focused on three cases, the first one being LaborVoices, the second BFC's Outstanding Worker and lastly QuizRR. Previous research has investigated crowdsourcing as a phenomenon and how it works as a method, and studies on specific crowdsourcing projects have argued the positive effects it has on bringing in grassroots perspectives in political processes (Hildebrand, Ahumada & Watson, 2013). However, it has not yet been widely researched how crowdsourcing can function as a continuous data collection and sharing method for factory workers and brands. Hence, this study has attempted to find explanations to how crowdsourcing tools can increase the collective agency of workers. Moreover, this study has focused not only on how the studied crowdsourcing tools work, but in what way they can best contribute to empower workers. The findings show some specific elements that are essential for emancipation, and more general notions to how this is achieved.

5.1. Educational tools for workers

This study has found that crowdsourcing is a method that can increase the collective agency of workers, if the tool is existing next to external factors like proper law enforcement, and brands' willingness to make changes.

The findings show clearly that it is the educational element of the platforms that can best contribute to increase the collective agency of workers. Sharing information with workers on rights and responsibilities that applies to them in their workplace is essential. In addition, it is central to share information on how to create dialogue in the work place. This means that for crowdsourcing tools to empower workers, the tool must educate on relevant information and how to use this information in practice. In turn, this means that crowdsourcing tools aimed to empower workers are designed to deliver information, not only collect it. The reason for this, is that with access to information, workers can solve issues themselves, in their own workplace without depending on external bodies to come in and initiate the changes. However, it is necessary to underline that crowdsourcing tools in themselves cannot solely solve the problem of worker exploitation. External factors like labor law enforcement, the informal economy, legislations and brands incentives make efforts to improve operating conditions are central. If this type of factors is disrupting the possibility of ensuring appropriate conditions, a crowdsourcing tool cannot be implemented and expected to be a solution.

The findings in this study extend the understanding that crowdsourcing can be a beneficial model to gather information from crowds and take it into use to solve for example business issues or social problems (Scheitzer, Buchiner, Gassmann & Obrist, 2012; Brabham, 2008; Arrilaga-Andreessen, 2015). In addition, it can be applied to projects to gain ideas and create engagement to increase awareness, as well as being platforms to make the voices of the people public (Hildebrand, Ahumada, Watson, 2013; Wachanga, 2012). It also expands the understanding of the crowdsourcing method to this specific type of use: dialog between workers and brands. On the other hand, it contradicts the idea that the web is the main platform for crowdsourcing (Brabham, 2009), as this study shows that one can also gather the data through phone calls. It also expands the understanding of crowdsourcing from being merely data gathering, to being a two-way communication model, or data sharing model. As argued in this study, sharing information with workers is seen as an important factor.

5.2. Data collection: crowdsourcing for social good as a model

It is found that the gathering of data is also essential, first of all to maintain relevant and useful information sharing to brands and other stakeholders. By collecting information about compliance issues and usual misunderstandings in the industries, and measuring knowledge levels, the tools can be improved continuously to meet the workers' needs. As research has previously argued, this information is also important to create insight in supply chains, so that brands are aware of the conditions where they source from. The crowdsourcing tools enables brands to collect grassroots information, which they previously have not been able to collect as efficiently as with the use of these tools. Further, the findings suggest that *marketing, design* and *stakeholder pressure* are central to creating a positively self-reinforcing system. The marketing of systems is found to be important when reaching workers to create content and secure use of the services. In addition, marketing towards brands to use the system brings in profit so that it is economically sustainable and can be maintained. The design enables the use of the system, and the features incorporated in the tools are strongly suggested to be customized to the technology skills, user habits and technology availability in the community in which they operate. Lastly, transparency towards the public is seen as a powerful way to pressure brands into taking more part in activities that can ensure better working conditions. The findings are not unison on whether consumer pressure towards brands or pressure among brands are the most powerful. However, the main takeaway is that a climate for disclosure among brands and other stakeholders on actions towards increased compliance can lead to

more brands taking use of these types of emancipatory tools and increasing the implementation of them.

5.3.   Globalization, labor and faith in technology

The effects of globalization and free trade has made it hard to get an overview and know what is happening in production supply chains (ILO, 2017; Tosstorff, 2005; Cobble, 2016; Szirmai, 2012; Chen, 2003; Delaney & Connor, 2016; Chen, Zhang, & Zhou, 2015). Both for consumers and brands, and also for workers. What kind of standards can be expected? What can workers demand? And who is actually working as a subcontracted employee for brands? Technology can be a tool to make the world a bit smaller, and more transparent (Nash, 2010). Brands can access information that let them improve their operations, workers can get information on what they can demand from their employee, and consumers can get insight in how and where their products are being made. It is easy to argue that technology and communication tools can provide a solution to the issues that has come from complex production chains. Partly, new technology can be a solution (Vodafone Group Plc, 2013; Bughin et al., 2014; Greene and Mamic, 2015; Thigo, 2013). However, as this study argues, it is important to have in mind that several factors must be in play to make long term and real improvements. The cases in this study have different approaches to how they create dialog between workers and brands. There is not one answer to which approach is the best. In addition, these tools are new and the long-term effect of them is not yet found. On the other hand, the tools provide new ways of opening the floor for dialog. They create a base for innovation and show that crowdsourcing can be an effective method to gather and share information. As this study argues, there is reason to believe that technology can play a powerful part in solving issues related to worker exploitation. However, one must remember that crowdsourcing tools do no stand alone as a solution. It is rather a tool that works together with enforcement mechanisms like labor laws, legislations and regulations.

"(…) *while technology can help flag abuses in the supply chain, it cannot single-handedly solve them*" (Tiwari, 2016).

5.4.   The method

This research was conducted through a multiple-case study of the three cases LaborVoices, BFC's Outstanding Worker and QuizRR. In-depth interviews with creators or representatives of the cases were conducted, and analyzed together with reports and product demonstrations,

online articles, blog posts, radio interviews and videos. It would have added interesting data to be able to interview workers with experience using the systems, however that was outside the scope and not possible for this research. However, the available data gave extensive insights to how the three tools work, their success and development, and opinions on these types of tools. The multiple-case study enabled the research to analyze data from different perspectives and different times, which contributed to interesting findings. The ability to use a range of sources and collect data from multiple platforms enabled a deeper look into the phenomenon of crowdsourcing.

5.5.   Limitations

This study was able to give valuable answers to the main research question, and the complimenting sub-questions. Through a multiple-case study, several types of data were analyzed and contributed to interesting findings. However, there are some limitations to this research that are necessary to point out. First of all, the sample of interview participants were not equally represented across the cases. Two interviews were held with participants representing the work with Outstanding Worker, one interview with LaborVoices and no interview was done with QuizRR. The reason for this was accessibility and time frame for the data collection. Even though online sources about QuizRR such as product demonstrations, blog posts, articles and videos were analyzed, there is no in-depth interview with the creator or representative of QuizRR. However, the data collected specifically concerning QuizRR is seen as a sufficient amount to give meaningful information about the case. For future research, an equal representation of each case would be advised.

The second limitation is concerning the representation of users of the systems. For future research, one could bring workers into the study as they represent the most central user group of the tools. Secondly, brands' perspectives and experiences with the tools could add meaningful findings. Brands' and workers' perspectives were represented through a sample of available user quotes presented by the cases, and through reports from the cases. However, a greater representation of these two groups would perhaps give alternative results to the study. Third, this study is not proven to be fully objective, as the research design requires subjective interpretation. Certain bias from the researcher's side might have affected the research and findings. Nonetheless, the study followed previous researchers' advised approaches and methods, and the data was carefully analyzed. Both personal and academic interest drove the research to be as in-depth as possible. In addition, rival explanations were analyzed, and the

outcome is not one truth, however an explanation of how these crowdsourcing tools are made up of elements that differ and resembles, and that they have different ways to increase collective agency of workers.

5.6. Future research

Following up on the limitations, future research could look specifically at brands' use of these systems and workers' use of the systems. This would give interesting perspectives from the two main user groups. Research from the brands perspectives would contribute with insights to brands' willingness to use the systems. In addition, it could show whether the crowdsourcing tools can affect their operations. This could contribute to further developments of crowdsourcing tools, where brands' preferences could be taken into account in the process of developing these tools. Workers' perspectives could be further researched to give more insight in how they use the system, what they accomplish by using them and find clearer answers to the exact ways the tools affect their work life. This could also be interesting in the development process of crowdsourcing tools, as these perspectives could be taken into consideration for improvements.

Further, a longitudinal study on specific communities where the crowdsourcing tools are used could give meaningful findings to their effect. This could show whether they can create long term changes and improvements. Also, in the future when technology usage advances even more, and more workers use and have access to smartphones, it would be interesting to research how reporting could be further advanced by using GPS, pictures and video to show incompliance in factories. In addition, whether ratings of factories available online could be used for workers to make informed decisions on where to work.

When it comes to transparency, it could be meaningful to research which degree of transparency towards the public is the most efficient. Whether the best approach is to publicize brand and factory compliance, or to share limited information to keep brands' more protected from public scrutiny. On one hand, full transparency could pressure brands into working to improve their operations, on the other hand it could be too risky for their reputation and drive them away from implementing the tools in their supply chain.

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Appendices

Appendix 1. Interview participants

Nr.	Name	Role	Organization	Interview length
1	Jill Tucker	Former Chief Technical Advisor	Better Factories Cambodia	25 mins
2	Sara Park and Ly Sokheng	Technical Officer and Communications Assistant	Better Factories Cambodia	43 mins
3	Kohl Gill	CEO	LaborVoices	30 mins

5 reports BFC	About the Outstanding Worker Project	Available online (except from 2015, sent from BFC)
2 reports LaborVoices	About their project in Turkey and in Bangladesh	Available for downloading online
2 product demonstrations	QuizRR's digital training tools online demonstration	Available online
13 articles BFC	Articles concerning BFC's project Outstanding Worker	Available online
23 articles LaborVoices and 2 podcast interviews	Articles concerning LaborVoices' crowdsourcing platform Symphony	Available online
29 articles and blog posts QuizRR	On QuizRR's digital training tools	Available online
15 short film clips, QuizRR	Short clips short clips (visualizing use of QuizRR training tools) approx. 1 min long.	Available online

Theme	Questions	Why
About the project - Development - Partners	- Can you tell me about your role in the project? - How has the project developed, and where is it today? - Have you had any specific partners working on improving the project? - What is the aim of the project?	To understand what is happening with the projects, how it is it development, and find out about news in the projects that might not be published online.
Design - Reporting of data - Updates / changes	- Can you tell me how the tool works? How is the data reported? - How do you notice if there is need to adjust the questions asked through the system? - What kind of changes has been done with design/technology after it launched?	To understand how the tool works, how it is used by factory workers and how the data is collected. To understand how they make decisions to change and update the tools. To understand how the process of development has been. *Based on research by Greene and Mamic (2015), Puspitasari and Ishii (2016), Islam and Grönlund (2011).*
Participation - Incentives - Entertainment - Marketing	- How do you make sure the workers' have incentives to participate and share information? - How do you spread the information about the tool in factories, so that people will use it?	Understanding how they create incentives to use the tools, and what kind of marketing efforts are used and seen as effective. *Based on research by of Estellés-Arolas & Gonzales-Ladrón-de-Guevara (2012), Brabham (2009), Thigo (2013) and Hildebrand, Ahumada and Watson (2013), Schramm (1979), Rogers (1976) and Choudbury (2011).*
Workers' issues - Creating questions - Prominent issues - Worker knowledge	- What kind of issues are mostly shared in the open-ended messages? o Are there issues related to gender?	To understand what kind of issues are reported by the workers. Secondly, knowing factory name was seen as an issue

	- Do workers typically know the name of the factory they work, and are they able to report this?	for BFC, which was further investigated through the interviews. To understand how this problem was tackled. *Based on the ILO conventions (ILO, 2017), Greene and Mamic (2015), Delaney and Connor (2016), and Chen, Zhang, Zhou (2015).*
Worker empowerment - Technology and working life - Transparency - Results - Future	- How do you think the use of mobile technology can affect the working life of employees in factories? - How has the information given by workers been used? o Have there been any changes in corporations' operations or in factories as a direct result of the information gathered by the tools? - What do you think is the most important change that needs to be done to make workers/or working conditions more visible?	To get an understanding of how they see the furture and how effective these systems can be. And to understand if the systems creates more transparency, and actual changes in factories. To understand their view on transparency towards the public. *Based on research by Hilbert (2011), Puspitasari and Ishii (2016), Islam and Grönlund (2011), Castells, Fernandez-Ardevol, Qui and Sey (2004), Vodafone Group Plc (2013), Bughin et al., 2014), Greene and Mamic (2015), Nash (2010), Chen, Zhang and Zhou (2015), Doorey (2005).*

Appendix 4. Topic list for product demonstrations, reports, online articles, blog posts and videos.

Main themes	Sub themes	Relevant to previous research
Design	Reporting of data Measurability Updates and changes Sharing of data User friendliness	*Related to research by Greene and Mamic (2015), Puspitasari and Ishii (2016), Islam and Grönlund (2011).*
Incentives to participate	Marketing efforts: direct community marketing Marketing efforts: media advertisements Prizes and material awards Personal gain Entertainment features: video Entertainment features: quiz	*Related to research by of Estellés-Arolas & Gonzales-Ladrón-de-Guevara (2012), Brabham (2009), Thigo (2013) and Hildebrand, Ahumada and Watson (2013), Schramm (1979), Rogers (1976) and Choudbury (2011).*
Workers' issues	Creating information content for sharing Important and prominent issues Workers' knowledge levels Brands' knowledge levels	*Related to the ILO conventions (ILO, 2017), Greene and Mamic (2015), Delaney and Connor (2016), and Chen, Zhang, Zhou (2015)*
Worker empowerment	Technology and working life Transparency: supply chain Transparency: public stakeholders Solving issues: acting on reportings	*Related to research by Hilbert (2011), Puspitasari and Ishii (2016), Islam and Grönlund (2011), Castells, Fernandez-Ardevol, Qui and Sey (2004), Vodafone Group Plc (2013), Bughin et al., 2014), Greene and Mamic (2015), Nash (2010), Chen, Zhang and Zhou (2015), Doorey (2005).*
Industry information	Prominent compliance issues Facts about the industry	*Related to the ILO conventions (ILO, 2017), Greene and Mamic (2015),*

	Hotlines and audits effect Digital literacy levels increasing Including factory management	*Delaney and Connor (2016), and Chen, Zhang, Zhou (2015), Hilbert (2011), Puspitasari and Ishii (2016), Islam and Grönlund (2011).*
Technology for change: possibilities and the future	Technology advancing Accessibility to smartphone Video and picture sharing	*Related to research by Hilbert (2011), Puspitasari and Ishii (2016), Islam and Grönlund (2011), Castells, Fernandez-Ardevol, Qui and Sey (2004), Vodafone Group Plc (2013), Bughin et al., 2014), Greene and Mamic (2015),*
Results	Brands taking action Workers taking action Education of workers	*Related to research by Schramm (1979), Rogers (1976), Choudbury (2011), Doorey (2005).*

Appendix 5. Coding process

Example: Quote from data	Open codes	Axial codes	Selective codes
"While this project delivers information to workers, it simultaneously gathers information about the level of knowledge that they possess, as well as recorded factory-specific information"	• Information back to workers • Participation in communication • Mobile phones for social good • Ask the workers • Two-way communication • Access to information	• Worker empowerment • Communication for change	Development communication (Choudbury, 2011; Rogers, 1976; Schramm, 1979). Mobile Technology for social good (Vodafone Group Plc., 2013; Bughin et al., 2014; Greene & Mamic, 2015)
"LaborVoices not only gives workers a voice, literally, and supports supply chain transparency – it's also a useful business tool" *"The company can follow up on complaints and track progress over time. They can also help to answer specific questions, such as "are fire exits unlocked at all times?"* *"The results can be measured and shared within the organization as well as to the buyers, enabling all stakeholders involved to make sure that the workers are informed of their rights"*	• Consumers' knowledge about brands • Brands knowledge about their production • Business tool • Project aim • Brand responsibility • Factory compliance • Action on results • Limited results with hotlines and audits	• Knowing about conditions • Increase compliance in industry • Measurability	Supply chain transparency (Doorey, 2005; Chen, Zhang & Zhou, 2015; Greene & Mamic, 2015).
"So, if we look at the current data of the mobile phones	• Spread of technology to	• Increased mobile use advantage • ICT training	Digital literacy (Islam & Grönlund, 2011; Puspitasari &

among Cambodian people you may be a bit surprised because over 94% of Cambodians have their own mobile phone". *"Due to illiteracy, low education levels and the fact that the Khmer Unicode is not available on many inexpensive phones, workers generally do not use their phones for texting, but rather calling".*	• developing countries • Using technology for worker empowerment • Digital understanding • Language illiteracy education levels	• Design	Ishii, 2016; Hilbert, 2011; Vodafone Group Plc., 2013)
"you know, so we wanted to find a way to connect workers, uhm, at their leisure, so whenever they wanted to, to connect with us." *"BFC will promote this project by providing lucky draw prizes to a random selection of workers who call in."*	• Prizes for participation • Giving out information in communities	• Marketing • Participation incentives	Crowdsourcing participation incentives (Estellés-Arolas & González-Ladrón-de-Guevara, 2012; Greene & Mamic, 2015).