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Mobile App versus Website: A Comparative Eye-Tracking Case Study of Topshop

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***Abstract*—**The UK is leading in online retail and mobile adoption. However, there is a dearth of information relating to mobile apparel retail, and developing an understanding about consumer browsing and purchase behaviour in m-retail channel would provide apparel marketers, mobile website and app developers with the necessary understanding of consumers' needs. Despite the rapid growth of mobile retail businesses, no published study has examined shopping behaviour on fashion mobile apps and websites.

A mixed method approach helped to understand why fashion consumers prefer websites on smartphones, when diverse mobile apps are also available. The following research methods were employed: survey, eye-tracking experiments, observation, and interview with retrospective think aloud. The mobile gaze tracking device by SensoMotoric Instruments was used to understand frustrations in navigation and other issues facing consumers in mobile channel. This method helped to validate and compliment other traditional user-testing approaches in order to optimize user experience and enhance the development of mobile retail channel. The study involved eight participants - females aged 18 to 35 years old, who are existing mobile shoppers. The participants used the Topshop mobile app and website on a smart phone to complete a task according to a specified scenario leading to a purchase. The comparative study was based on: duration and time spent at different stages of the shopping journey, number of steps involved and product pages visited, search approaches used, layout and visual clues, as well as consumer perceptions and expectations.

The results from the data analysis show significant differences in consumer behaviour when using a mobile app or website on a smart phone. Moreover, two types of problems were identified, namely technical issues and human errors. Having a mobile app does not guarantee success in satisfying mobile fashion consumers. The differences in the layout and visual clues seem to influence the overall shopping experience on a smart phone. The layout of search results on the website was different from the mobile app. Therefore, participants, in most cases, behaved differently on different platforms. The number of product pages visited on the mobile app was triple the number visited on the website due to a limited visibility of products in the search results. Although, the data on traffic trends held by retailers to date, including retail sector breakdowns for visits and views, data on device splits and duration, might seem a valuable source of information, it cannot explain why consumers visit many product pages, stay longer on the website or mobile app, or abandon the basket. A comprehensive list of pros and cons was developed by highlighting issues for website and mobile app, and recommendations provided.

The findings suggest that fashion retailers need to be aware of actual consumers' behaviour on the mobile channel and their expectations in order to offer a seamless shopping experience. Added to which is the challenge of retaining existing and acquiring new customers. There seem to be differences in the way fashion consumers search and shop on mobile, which need to be explored in further studies.

***Keywords*—**Consumer behaviour, eye-tracking technology, fashion retail, mobile app, m-retail, smart phones, Topshop, user experience, website.

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I. Introduction

FASHION is the fastest growing industry in the UK with online sales seeing constant year on year rise. Though in 2012, only 6% of consumers with smart phones used mobiles to purchase on-line [20], consumers using mobile devices for shopping are becoming a key influencer in the way consumers shop on-line, from research, to checking prices, to utilizing codes and discounts at the point of purchase in stores, even to paying for products. According to Mintel [16] clothing and footwear tops the list of products bought online in the UK. The research shows that the number of people using various devices, including smartphones, tablets and laptops, away from home for online shopping is quite small, and the majority of consumers would purchase goods online using any of their mobile devices from the comfort of their home. A top device for shopping away from home is a smartphone, which accounts for 17% [16]. Moreover, around 12 % of females aged 16 to 24 have used a mobile device to help them shop for clothes in-store [15]. Over a half of smartphone users accessing internet on their devices at home have used their smartphones to purchase goods online. Although, fashion retailers and market research reports show that mobile apps might be the most important mobile platform for fashion consumers [3], the survey carried out in the UK in 2014 [18] showed opposite trends. Over 60% of surveyed preferred to use websites on their mobile devices despite the wide range of mobile apps available.

Up to date papers using eye tracking technology employed eye trackers for various research projects, like tracking users eye movements and attention to visual stimulus in-store [11], [14], [13] and online. Although, there is a number of papers using eye tracking technology in online environments [5]–[7], and some investigate website design [21] and presentation ways [9] as means to influence consumers' decision making process [10], [22]. However, these papers did not investigate online environments as dynamic environments, and did not focus their attention on the shopping process online. Many of the papers described in literature review examined websites in a form of static pictures presented during eye tracking

experiments, or manipulating elements of the website. Even eye tracking study in-store used fixed images, and was not conducted in real store environment [11]. Although, researchers state that they use eye tracking in the most natural and least interrupting way, but the stimuli used for the experiments is overly manipulated and not dynamic as it is online. Guo et al. [8] used real fashion websites for the analysis and [1] looked at groceries shopping online, but the authors did not ask the participants to complete the transaction, they finished the experiment by putting the items to the basket. Moreover, the majority of the papers discussed in literature review base their findings upon quantitative analysis of the eye tracking data. The paper [1] used eye tracking technology in online grocery shopping to identify what information are consumers' seeking when shopping for groceries online. The authors used real online website and asked the participants to do their weekly shopping, with eventual payment. However, the payment was not recorded by eye tracker for personal information protection reasons. Johnson et al. [12] explored the use of mouse tracking to evaluate viewing behaviour and tested possibilities to measure visual information processing using tracking pointing movements made with a computer mouse. The authors suggested that mouse tracking could replace eye tracking to monitor users' behaviour, but they also noted that the scan path of the mouse covered a smaller area than the scan path of the eye. Cheng [4] combined the remote and portable eye-trackers for quantitative and qualitative evaluation of music mobile phone. However, the author analysed a user interface of the mobile device in on-screen simulation using a remote eye-tracker, and the real device using a portable eye-tracker, reported limitations using portable eye tracker at a time. Moreover, there are no papers examining shopping behaviour on mobile platforms, such as smartphones. This research paper focuses on analysing fashion consumers shopping journey on mobile devices, and employs innovative mixed methods approach with eye tracking technology in a core of it.

The UK is a world leader in mobile adoption and mobile advertising. It is becoming increasingly difficult to ignore the importance of smartphones in fashion retail. In recent years, there has been an increasing interest in adopting mobile retail channel, particularly in the UK. However, a major problem is a gap in research about the relationship between m-retail channel and consumer browsing and purchase behaviour. Despite recent developments in digital technology, approaches adopted by some fashion retailers have a number of problems. Therefore, this study would provide all professionals, such as apparel marketers, mobile website and app developers, with necessary understanding about mobile fashion consumer' needs. However, up to date, there has been little discussion about actual shopping behaviour on fashion mobile apps and websites, and no published study has examined overall shopping process on smartphone including the payment stage. So far eye tracking technology has only been applied to test fashion websites and advertisement with static eye trackers. The aim of this paper is to develop a framework which will help to understand what fashion consumers do on mobile devices and why. The following three areas are not documented yet: eye tracking actual fashion mobile apps and websites, tracking the whole shopping process through from initial search to the payment, and looking at users' interaction with real smartphones. The proposed methodology is a step away from what was done to date.

II. Methodology

A mixed method approach was chosen because it helped to explain mobile fashion consumers' preferences for mobile optimized websites versus mobile apps. This paper examined natural user experience on mobile devices with actual fashion mobile apps and websites. To date various methods have been used to examine user experience online, mainly eye tracking visualizations in a form of heat maps or statistical spreadsheets. A variety of research methods were used to assess fashion consumers' behaviour on smartphones, and the data were gathered from multiple sources on the same day. Eye tracking experiments, user observation, interviews with retrospective think aloud and pre-experiment survey were used to allow a comprehensive knowledge about what fashion consumers do on mobile, how they browse, and why they behave in that way. Eye tracking glasses by SMI SensoMotoric Instruments were used for eye tracking experiments. This mobile gaze tracking device was chosen since it can record real-time interactions on smartphones, is portable and does not constrain participants' freedom in any way. Individual participant's eye tracking data were extracted as quantitative data spreadsheets, dynamic visualization files (gaze video, scan path video), and RTA video files using export facilities. Eye tracking technology allowed to record real-time users' shopping experience and enriched traditional user-testing methods, such as surveys, interviews and observations, in order to better understand the shopping experience on smartphones and to recommend ways to enhance the development of transactional mobile platforms. Existing mobile shoppers, females aged 18 to 35 years old, using iOS smartphones were recruited online.

According to the list of favourite fashion retailers among females aged 18 to 34 years old in UK as of 2014 [19], the key fashion mobile apps were listed as follows: ASOS, Topshop, River Island, Ebay Fashion, Next. It was decided that the most suitable fashion retailer for this study was Topshop, because it is a multi-channel apparel retailer, and has in-store, online and mobile presence. In terms of adoption of the mobile channel, Topshop went mobile in 2010 developing their first mobile app for iPhone, then in 2013 an app for Android OS mobile devices. It was decided that the best method to adopt for this investigation was to ask the participants to use Topshop mobile app and website on a smartphone according to a specified task.

The choice of the smartphone for the study was done based on findings of [18]. The researchers found that in terms of fashion shopping on mobile devices, consumers using iOS smartphones purchase more clothing on mobile than Android OS users. Although, all smartphones with iOS are iPhones, but the results of [18] showed that respondents owned various

models of iPhone, such as iPhone 4, iPhone 4s, iPhone 5 or iPhone 5C. To increase the reliability of results and control for bias, it was decided to create standardized settings for all participants. The following settings were controlled during experiments: device used, stimulus shown and Internet connection speed. In order to enable standardized settings for the experiments, participants were given a smartphone, iPhone 5S, which was provided by the moderator and it was connected to MMU Wi-Fi in order to maintain the same speed of Internet connection throughout all the experiments.

The demo session was conducted two weeks prior to the research project in the lab. The demo session helped to identify the best possible settings arrangements needed during experiments. This was useful to test the experiment in terms of duration, settings of the software for eye tracking experiments, and post experiment interviews.

Fig. 1 The participant wearing eye tracking glasses while using iPhone 5S

Each eye tracking session had one participant at a time, researcher (moderator) and technician(s). Duration of the whole session with one participant was approximately 60-90 min. This is including filling in a survey, two eye-tracking experiments and two post-eye-tracking interviews. Although, eye tracking sessions were held in the Usability Lab at MMU, the room was equipped with a sofa, wall decorations and a small table, and the room used for experiments recreated a simulated living room environment. The participants were able to sit comfortably and took different postures based on their natural preferences. This study provided the opportunity to explore fashion consumers' behaviour on smartphone without interrupting their intended behaviour, by creating natural real-live shopping settings. An unobtrusive eye tracking equipment was used during the sessions looked similar to a pair of spectacles, Fig. 1. The eye tracking glasses did not constrain the participants in any way and allowed for comfortable and relaxed interactions with the smartphone.

III. Sample

The participants were recruited by publishing a call for participants online, and contacting the participants of the previous studies who expressed their interest to participate in the further study. Ten participants have signed up to participate in this study. Two participants were excluded from the analysis due to technical problems in eye tracking calibration and missing data. As the result, the data obtained from the eight remaining participants were analysed. A small sample was chosen because of the expected quantity of data to be generated at the end of the research project. Mobile eye tracking technology uses video recordings as a basis for visualization of the data files, which produces a huge amount of data for analysis. As a result the following data sets were gathered for analysis: 8 questionnaires, 8 consent forms, 16 gaze video files, 16 scan path video files, 16 RTA video files, 16 statistical data spreadsheets, 16 observation notes, 16 interview audio recordings.

IV. Procedure

Each participant was tested separately, and had to take part in two eye tracking experiments: on the mobile app and on the mobile optimized website. Both experiments were conducted on the same day with the same participant. At the beginning of each experiment the participant was introduced to the way eye-tracking technology works, and informed about all the necessary setting and calibration requirements by the technician of the lab. During the first eye tracking experiment the participants completed the task on Topshop's mobile app. All participants had a standardized task with a fixed budget of £75.00, which constrained search and kept them more focused. The task was to browse the retailer's mobile app or mobile optimized website in order to find up to two fashion products for a night out and complete a purchase. After the eye tracking experiment the participant was invited to think aloud whilst looking at the gaze re-play on a screen, and comment about any likes and dislikes, difficulties, issues and advantages during browsing and purchasing stages on the mobile app. The researcher asked the participant to explain why she looked long on one or the other part of the screen, part of the mobile app or a link. During the second eye tracking experiment the participants used Topshop's mobile optimized website [17] on smartphone using a browser of their choice to complete a task according to the same specified scenario as per first experiment. After the second gaze recording completed the participant was invited to think aloud whilst looking at the gaze re-play on a screen, and followed the same procedures as per the experiment with the mobile app. The researcher asked the participant to explain why she looked long on one or the other part of the screen, part of the website or a link. After all experiments and RTAs were recorded the participants were asked about their experience using smartphones for fashion shopping on the mobile app and the website, and what did they think about these two platforms in comparison.

Human eyes jump from place to place a few times per second, and in eye tracking research these movements are called saccades. However, a person can extract a visual information only when the eyes are focusing on something and are motionless for a short period of time [2]. According to [2] eye movements are task-dependent. This means that the same person, if given a different task while looking at the same object or stimuli, would look at it differently and would

generate a different gaze pattern. Therefore, in order to evaluate users' behaviour on mobile platforms while shopping for fashion products, there was a need to look for patterns in their approaches to shopping on mobile, their behaviour and gaze trajectory. Moreover, employing eye tracking method helps to detect usability problems and other technical issues. This research project aims at comparing two mobile shopping platforms of the same fashion retailer in order to identify which elements or features are the most attractive to fashion consumers, and which ones would need to be modified in order to satisfy these consumers' needs while shopping on their smartphones.

V. Findings

For this study, the comparative analysis was used to explore the differences in consumer experience on the mobile app and the website. In order to achieve this, a series of comparisons were performed based on the following parameters: average durations at various stages of the shopping journey, numbers of steps undertaken and numbers of products viewed, search approaches, mobile platform's layout and visual clues, as well as consumers' perceptions and expectations.

The eye tracking data were used to develop shopping journeys for each participant and each experiment. This means that in total 16 shopping journeys were developed: 8 cases for the mobile app and 8 cases for the website. The shopping journeys allowed for calculation of the number of product pages visited by each participant and the number of steps undertaken during the whole shopping journey on each mobile platform. The analysis of the number of clicks during the shopping journey was not sufficient for this research project because the users, while interacting with the mobile app or the website, paid their attention to various areas of the product pages alone. This means whereby to visit a product page would be accounted as one click, but there were four steps. For example, one of the participants has made the following steps while on that product page: viewing product photos, reading reviews, checking the size of the model on those photos, and looked for suggestions. All these steps were undertaken whilst visiting one product page. The observation during eye tracking experiments showed that the participants behaved differently and looked at different areas when compared one to another. This suggested the need to account for the number of steps instead of clicks, and compare the results among all participants. Although, the shopping journeys are data rich, but in order to understand what consumers do on the mobile app or the website, and why they prefer websites to mobile apps, there was a need to combine different types of data. Therefore, there was a need to develop a framework, which would allow to work with different databases, and to combine the results in order to have a comprehensive understanding about mobile fashion consumers and their types.

In order to compare users' behaviour on the mobile app and the website, the data sets were presented in tables with average calculated for each parameter. The duration of the shopping journey, which accounts for the time spent from the beginning of the search until the payment was completed, the number of steps undertaken during the shopping journey and the number of product pages visited on the Topshop mobile app by each participant are presented in Table I. The results of the same parameters on the Topshop website are presented in Table II.

Table III compares the results obtained from Tables I and II. It presents the comparison of the average scores of duration of the shopping journey, number of steps and product pages for the mobile app and the website. The data analysis showed that there are significant differences between Topshop mobile app and mobile optimized website in terms of the number of steps undertaken and the number of product pages visited. From the data can be seen that eye tracking experiments on the mobile app resulted in the higher number of steps and product pages compared to the website. It is apparent from Table III that the number of steps undertaken during the shopping journey on the mobile app is double the number of the website. Moreover, the number of product pages viewed on the mobile app is triple the number on the website.

TABLE I
Number of Steps and Product Pages Visited During the Shopping Journey on the Mobile App

	Duration of the shopping journey, min	Total number of steps	Number of products viewed
P1	6	45	5
P2	15	105	10
P3	14	160	28
P4	15	125	15
P5	25	239	24
P6	10	87	11
P7	5	71	2
P9	6	47	3
Average	12	110	12

TABLE II
Number of Steps and Product Pages Visited during the Shopping Journey on the Website

	Duration of the shopping journey, min	Total number of steps	Number of products viewed
P1	14	67	3
P2	10	59	3
P3	11	107	5
P4	11	57	5
P5	14	90	4
P6	11	68	5
P7	9	31	2
P9	8	45	3
Average	11	66	4

TABLE III
Comparison of the Average Numbers of Steps and Product Pages Visited during the Shopping Journeys on the Mobile App and the Website

	Average duration of the shopping journey, min	Average total number of steps	Average number of products viewed
Mobile app	12	110	12
Website	11	66	4

Comparisons between the two mobile platforms showed significant differences in user experience and behaviour when

shopping on retailer's mobile app and website. Table III compares and summarizes the average results of the duration of the shopping journey, the number of steps undertaken and the number of product pages viewed on the mobile app and the website. This table is quite revealing in several ways. First, there were no significant differences found between the average duration of the shopping journey on the mobile app and the website. Second, the most striking result to emerge from the data is that the average number of products viewed on the mobile app was triple the number on the website. Interestingly, the average number of steps undertaken during the shopping journey on the mobile app was only double the one on the website. Fashion retailers relying on product views as engagement level's indicator might suggest that the mobile app is more engaging than the website. That could be a case, if only quantitative data are used to analyse online consumers' behaviour, but not the whole shopping journey as per this study. A comparison of the two mobile platforms reveals that there might be something very specific about the mobile app, which influenced the users to behave so differently. Why did users behave this way? Why did they view significantly more products on the mobile app than on the website, even though they had exactly the same task on both mobile platforms?

A possible explanation for visiting a triple number of product pages on the mobile app might be that users liked more products they have seen on the mobile app. However, there is a need to compare other data sets gathered during the study. In order to know more about what users did differently on the mobile app, there was a need to compare the duration of time spent at various stages of the shopping journey. Using scan path video files for each case, the following parameters were calculated: the average durations at home page, browsing, visiting product pages and checkout, as well as average duration visiting one product page, Table IV. As can be seen from the data in Table IV, there was no significant difference between the mobile app and the website in terms of the average time browsing and at the checkout. It is apparent from the table that the average time viewing product pages on the mobile app was nearly double the time on the website. There was a significant difference between the mobile and the website in terms of the average time spent viewing a single product page. On average, users on the mobile app spent significantly shorter time viewing product pages than on the website.

TABLE IV
COMPARISON OF THE AVERAGE DURATIONS AT VARIOUS STAGES OF THE SHOPPING JOURNEYS ON THE MOBILE APP AND THE WEBSITE

Mobile platform	Average time spent at home page, s	Average time browsing, min	Average time spent at product pages, min	Average time spent at the checkout, min	Average total time of the shopping journey, min	Average time spent viewing product page, s
Mob app	13	4.8	2.5	4.5	12	11
Website	39	4.3	1.5	4.6	11	23

The comparison of the average durations show that there were no significant differences between the mobile app and the website in terms of the total duration of the shopping journey, the average time spent at the checkout and the average duration browsing. The mobile app was supposed to offer a quicker and easier checkout process than the website. The future studies could address these opportunities to explore the checkout process on the mobile app and the website. The comparison of the results in the Table IV shows that the average time spent viewing product pages on the mobile app nearly doubles the time on the website, what is not surprising knowing that users have visited triple number of product pages compared to the website. The most striking results of the data comparison show that the average time spent viewing one product page on the mobile app is two times shorter than on the website. This suggests that users might have visited more product pages on the mobile app not because of genuine interest in those products. The reason for this might be related to usability of mobile platforms used in this study. The comparison of the two mobile platforms reveals that there is a need to understand why users behaved so differently on the mobile app.

Turning now to the qualitative data gathered during the experiments, such as RTAs and interviews. The analysis of the RTA and interview data showed that participants expressed their opinion about the use of the each mobile platform, and had clear preferences towards some features of the mobile app and others of the website. These findings suggested the need to compare and rate problem areas mentioned by the participants during RTAs. A list of problem areas of the mobile app as identified by interviewing the participants was developed. The problem areas were arranged in descending order, and are presented in Table V.

When subjects were asked about their experience using Topshop mobile app during the experiment, the majority commented that the pictures were too small in search results. One of the participants said about the mobile app: "When you are scrolling through all these pictures that are really small, so you cannot really tell what is what." Whereby another participant told about her seeing some products and thinking that it could be a nice item: "So there were few that I thought, look at that. I click on it, and then I thought 'Oh my God, that was awful!"

The analysis of the interview data reveals that for five out of eight participants having too small pictures in the search results was one of the obstacles finding what they were looking for.

Turning now to the data about problem areas of the website. A list of problem areas of the website is presented in Table VI. An overview of the main problem areas of the website suggest that the majority of the problems encountered by users are technical issues. It is apparent from Table VI that 100% of the sample found slow loading speed on the website disturbing. It is important to remember that both mobile platforms were

accessed on the same device, which was connected to the same Wi-Fi network. In contrast, only one participant has encountered a problem of not loading the search results while browsing on the mobile app.

There was not seen a reduced time for the mobile app at the checkout, see Table IV. Feedback both on quantitative and qualitative data indicates that there are ongoing problems at the back-end on both mobile platforms. Some of the participants wanted to drop from the experiments due to the problems encountered while shopping. One of the participants selected 'collect from store' delivery option, because she did not have enough money left to pay for home delivery. She was going round in loops several time before completing the transaction. This participant said: "I couldn't review my items at the last minute, and then I had to go back to the process again. That winded me up as synchronic." Moreover, a problem with 'collect in store' delivery option was encountered by 100% of users who selected it. Another participant who was not willing to spend a lot of time at the checkout said: "…I am really not very forgiving the things that take more time than it should do, because my time is precious. And if anything takes longer than I think it should do, then, just, I don't know, I guess, I would just ditched."

TABLE V
PROBLEM AREAS OF THE MOBILE APP

Problem area	Number of participants who encountered the problem
Too small pictures in search results	5
Colour options not available	4
Zoom in could not be found	4
Could not find refine button	3
Shoes category products displayed on model	2
Not loading	2
Could not change view in search results	2
No product pictures on the model	2
Suggested products are not related to viewed products	2
Difficulty to edit basket	2
Sale - no sub categories	1
Could not view other product photos	1
Too small pictures in product page	1
Could not find checkout button	1
Mixed up products in ads	1
Not able to review order at the checkout	1
Going round in loops for collect in store option	1
Re-type contact details twice due to checking basket	1

TABLE VI
PROBLEM AREAS OF THE WEBSITE

Problem area	Number of participants who encountered the problem
Slow loading	8
Not anchoring	6
Sub-categories not available in menu	4
Difficulty to flip through product photos	4
Re-type contact details twice due to checking basket	4
Difficulty to find shoes sub-categories	3
Could not change view in search results	3
In categories products are mixed up	2
Too big pictures in search results	2
Not clear	2
No suggestions of similar products or recently viewed	2
Could not find refine button	2
Pop-ups got in a way	2
Less products in search longer to look through	1
Changing view of search results on its own	1
Too big pictures on product pages	1
Going round in loops for collect in store option	1

A comparison of the results from Tables V and VI reveals that there seem to be significant differences in the design and layout of the mobile app and website. For example, five out of eight participants said that pictures in the search results on the mobile app were too small. Whereby, two of them stated that the pictures in the search results on the website were too big. The differences in mobile platform's layout and visual clues seem to influence the entire shopping experience on a

smartphone. The comparison of the default layout of the search results on the website and on the mobile app showed, that, indeed, the size of the product pictures displayed in the search results was different on these two mobile platforms, Fig. 2.

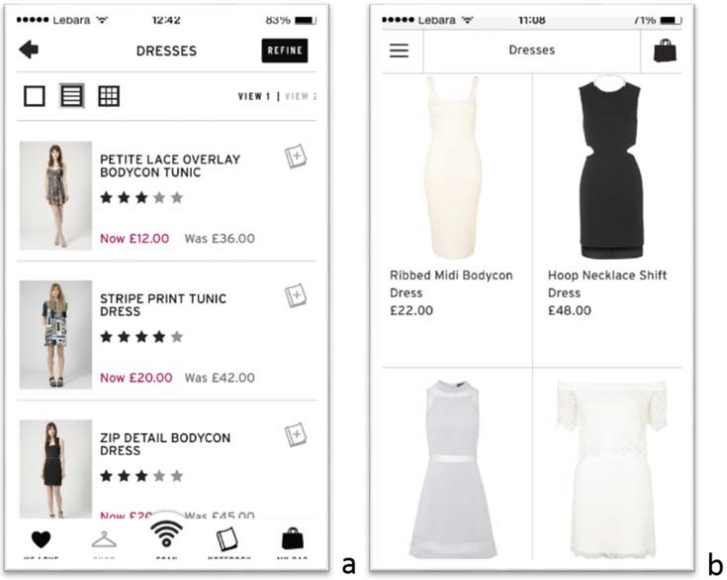

Fig. 2 The default layout of the search results page on the mobile app (a) and the website (b)

The observation to emerge from the data comparison was that, in most cases, the participants behaved differently on the mobile app and the website. It can be seen from Fig. 2 that the default settings of the search results pages are different in layout, size of the pictures and, even, position of the menu, refine or basket buttons. It is apparent from Fig. 2 that Topshop did not try to design the mobile app and the website as a consistent brand presence, and these differences might discourage their consumers to use mobile devices for shopping. There seem to be a need for standardization in design of mobile shopping platforms.

VI. Conclusions

The present study was designed to determine the differences and similarities of two mobile shopping platforms. Having Topshop a fashion market leader in the UK, the results of this study indicate that developing a mobile app cannot guarantee a success. It requires ample knowledge about mobile fashion consumers' needs in order to satisfy them.

The comparison showed that the users had to visit three time more products on the mobile app than on the website, because of a limited visibility of products on the search results pages. Moreover, this result has not been previously described. This significant difference may be explained by the fact that different people are involved in developing these two mobile platforms.

Online retailers are bombarded with data, which businesses use to inform them how to develop marketing strategies. Fashion retailers might be relying mainly on traffic reports and retail trends, with sector breakdown for visits, views, device splits and durations. Although, all these might seem a valuable source of information for retailers, but cannot explain why consumers visit so many product pages or stay long on the website or the mobile app. It is a narrow approach, which does not reflect the actual mobile consumers' behaviour.

The results of the qualitative data analysis were used in developing a comprehensive list of strengths and weaknesses of the mobile app and the website by highlighting main issues. Two types of problems emerged from the findings relate specifically to technical issues and human errors. The data analysis did not show that the mobile app is easier and quicker to checkout than the website, what brings open questions for future research.

Interestingly, the findings suggest that there might be some differences between consumer groups in terms of search and shopping behaviour on smartphones, which need to be explored in further studies. The findings of this study cannot be generalized to all fashion mobile apps and websites. However, the sample was sufficient for Topshop case study and allowed to identify the major problem areas of the mobile app and the website and to suggest ways to improve it. By conducting a mixed method approach this study found that there needs to be more done in the area of fashion m-retail in order to offer customers a seamless shopping experience in mobile channel. These findings suggest that fashion retailers need to have a better knowledge and understanding about their consumers, especially mobile fashion consumers and their expectations from mobile shopping platforms. This would help in retaining existing and acquiring new customers.

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