TRACEABILITY TO FARM & FACTORY, COUNTRY OF MANUFACTURING, AND APPAREL PURCHASE SCENARIO

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APPROVAL PAGE

The undersigned, appointed by the dean of the Graduate School, have examined the

Thesis entitled:

TRACEABILITY TO FARM & FACTORY, COUNTRY OF MANUFACTURING, AND APPAREL PURCHASE INTENTION

Presented by

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A candidate for the degree of

Masters of Science

And hereby certify that, in their opinion, it is worthy of acceptance.

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Dr. Glenn Leshner

To my parents:

thank you for believing in me.

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CHAPTER I: INTRODUCTION

Chapter I contains the following sections (a) background of the study, (b) purpose of the study, and (c) significance of the study.

Background of the Study

In recent years, traceability, transparency, sustainability and certification have been emerging issues in the textile and apparel industry. Studies show that consumers are concerned about their environment and society, and have an increasing demand for straightforward, transparent products (Bhaduri & Ha-Brookshire, 2011, Flatters & Willmott, 2009). The popularity and demand for such transparent products are expected to increase by almost 19% by 2014 (Slavin, 2009). In today's competitive, turbulent and highly fragmented business environment (Dickerson 1999, Dyer & Ha-Brookshire, 2008), firms need to consider opportunities for tailoring their products to reach specific consumers. Traceability provides one such opportunity. Traceability is defined as: "the ability to trace the history, application or location of that which is under consideration" (ISO, 2005). Traceable products provide additional assurances that help to build consumer trust and confidence (Clemens, 2003). Trust, in turns, affects consumers' purchase intentions (Bhaduri, 2011). With traceable information, consumers feel assured about the origin, source, and procedures under which a product was produced (Lusk *et al*., 2006; van Amstel *et al.*, 2008). This assurance has a strong effect on their purchase decisions (de Jonge *et al*., 2008). What started as a movement in the food industry (Soron, 2009), with consumers' increasing queries about where their food came from, who produced it, and what chemicals were sprayed on it, traceability or 'identity

preservation" (Liddell and Bailey, 2001) became a buzzword that is now reaching other industries.

With respect to other industries, efforts to increase consumer trust through transparency have begun to emerge in the apparel industry. All American Clothing Co., for example provides consumers with a specific "traceability number" to retrieve information about the US farm where the fibers in its products are sourced from (All American Clothing Co., 2013) while Levi Corporation informs its customers about the company's impact and involvement in environmental initiatives (Clothing traceability, 2013). These recent developments suggest potential benefits to businesses by enhancing consumer confidence. In an e-commerce environment, a company's website acts as one major promotional vehicle contributing to successful business transactions. Thus, in webpages, businesses might be able to assure their genuineness by providing traceable information. With details about the fiber origin, and/or where those products have been manufactured, companies might be expected to be less deceptive in their claims, and be more cautious about their qualifying claims for textile products. Cotton is particularly relevant to this discussion regarding both the environment and traceability since it is the most widely consumed fiber world-wide, and is clearly a popular fiber among consumers (Cotton Incorporated, 2011). As one of the leading cotton producers in the world, (Cotton Incorporated, 2010b), the United States is believed to produce cotton that is better in quality than its competitors, particularly with respect to fiber length (Kadolph, 2007). Thus, its popularity all over the world has provided U.S. cotton growers with an economic advantage. The purchase of US cotton is viewed by some US consumers as saving domestic employment, acting patriotic by buying local, and being socially

responsible (Ha-Brookshire & Norum, 2011). Regarding the environmental impact of cotton in the U.S., farmers and producers are working on reducing the criticized negative impact of the farming processes, including excessive water consumption and the use of pesticides (USDA, 2010) making it more sustainable and profitable (Cotton Incorporated, 2010d). With all of these sustainable developments, the involved farmers, and other stakeholders, might be interested about how consumers perceive their efforts towards sustainability and how such efforts can be effectively communicated with consumers. (Norum & Ha-Brookshire, 2011).

Compared to the food industry where locally grown products are quite popular, fiber producers in the United States face challenges in terms of gaining popularity among local consumers in USA (Hustvedt & Bernard, 2008). Locally grown commodity fibers are usually distributed overseas for processing into textiles and apparel, which are then sold as apparel products produced in a foreign country. U.S. laws require labelling of the Country of Manufacturing (COM), but doesn't require labelling of the fiber source in the product. Thus, there is no incentive or signal provided to consumers regarding the fiber origin. Very few studies have considered the consumers' perspective with regard to the effect of traceability on demand. Given that increased traceability could benefit both cotton growers and apparel manufacturers, this study will explore traceability regarding fiber and factory origin, and their effect on consumers' perceived ad credibility, attitudes and purchase intention.

Purpose of the Study

In clothing and textile industry, previous research has focused on transparency and its effect on consumers' attitudes, willingness to pay and purchase intentions. Though these studies provide a strong theoretical background about consumers' growing interest in fiber-origin, farming methods, and country of manufacturing, there is a gap in the research about how businesses can effectively communicate transparency-related information to consumers. The purpose of this study is to gain a better understanding of whether including traceable information about a product can influence consumers during an apparel purchase scenario. Specifically, this study will examine the effect of traceability regarding fiber origin, factory origin, and the country of manufacture, on consumers' attitude towards apparel advertising, ad credibility, attitude towards product, and purchase intentions for apparel.

Significance of the Study

The literature review suggests that the completeness of a product's information is directly and positively related to consumers' product and brand preferences (Hiscox and Smyth, 2007; Hustvedt & Bernard, 2008; Hustvedt & Bernard, 2010). Consumers have shown a preference for having access to product and company information at the point of purchasing an apparel product (Bhaduri et al, 2011). Thus, the availability of traceable information increases assurance about safety and quality, thereby, building consumer trust and confidence (Clemens, 2003). However, only a few companies have reacted to the situation. To date, little information is available regarding traceability and apparel products throughout the supply chain. Consumers still have no means to access and trace where from the fibers originate, where the apparel is made, and by which firm.

Considering the increasing power of traceability, it is important to investigate the effect of such traceable information on consumers' attitudes and purchase intentions.

This study is expected to add to the literature on traceability, and COM, specifically related to apparel acquisition in three ways. First, this study is expected to contribute to the growing body of traceability literature, applied to the textile and apparel (T&A) industry. Second, this research will examine importance of traceability about multiple stages of the supply chain on consumers' attitudes, perceived credibility and purchase intentions. It will shed light on whether availability of information about the supply chain influences consumers' attitude towards their advertisements, and also the products. Thus, businesses willing to advertise traceable information may better understand the importance of such information in business transactions. It will help businesses gain insight regarding consumer expectations, and thereby, react to them to create a competitive niche. Third, such information will be particularly relevant to companies using US cotton and who are also seeking to be more transparent. This will be helpful to support US cotton farmers as well. Information about their cotton and farms will better reach consumers through traceability, thus gaining more appreciation and increased business. Finally, this study caters to consumers' growing needs about apparel products. Their various queries about apparel, their source and various processes, as addressed by businesses through traceability will help to better meet their needs and demands. Thus this study will help consumers to be well informed with explicit traceable information about their apparel products.

CHAPTER II: LITERATURE REVIEW

The literature review section includes the following: (a) traceability, (b) fiber-origin/farm traceability, (c) factory-origin/factory traceability, (d) country of manufacturing (COM), (e) ad credibility, attitude towards the advertisement, attitude towards the product, purchase intention and (f) research gaps, hypothesis development, and conceptual model.

Traceability

The importance of traceability in the food supply chain has intensified over time and has received strict scrutiny. In past decades, events like the mad cow disease crisis, dioxin in chicken feed, and issues resulting from genetically modified crops, have raised questions about the importance of traceability in food manufacturing. (Hobbs, 1996; Loader and Hobbs, 1996; Paarlberg, 2002; Palmer, 1996). In the United States, health concerns like salmonella and *E. coli*, the desire to protect exports, and qualms regarding biosecurity vulnerability contributed to the need for traceability (Hoffmann & Taylor, 2005). Given these factors, consumers became increasingly concerned about food safety, animal welfare, and the environmental impact of food production methods and agro-processing (Opera & Mazaud, 2001). These growing concerns among consumers as well as other stakeholders have led them to demand transparency about food from farm to plate, leading to the establishment of traceability as an important policy concern in food quality and safety. It is now considered a requisite in the food industry, with several nations and companies necessitating it as a compulsory condition for business. The European Union mandated traceability in January 2005, for all food firms for their products in different stages of production (Alfaro & Rábade, 2009). In 2003, Wal-mart

served notice to its top meat suppliers expecting to receive goods from them supporting traceability using new technologies (Smith, Tatum, Belk, Scanga, Grandin & Sofos, 2005).

Implementing traceability empowers firms to reinforce consumers' confidence in the strength and integrity of their products, their brand value, and to meet global standards (Smith, Tatum, Belk, Scanga, Grandin & Sofos, 2005). Lee, Han, Nayga, and Lim (2011), reported that consumers prefer to pay a premium price as high as 39% for traceable food products over non-traceable ones. Some similar results have been reported by Dickinson and Bailey (2002), who found that some consumers are willing to pay a further premium price for traceable products when presented with other valuable attributes like transparency, reliable information and assurance. By being able to provide consumers with more information about the origins, production processes and the ingredients used (Lusk et al., 2006; van Amstel et al., 2008), businesses try to strengthen consumer confidence. Developing consumer confidence, in turn, plays an important role in food-related decision making. (Jonge et al., 2008a,b). Ubilava and Foster (2009), found that some consumers consider traceability equivalent to quality certification. While yet another study by Loureiro and Umberger (2007), found American consumers regard the United States Department of Agriculture (USDA) certification with more significance than traceable information or country of origin information in food and agriculture. Similar studies related to the clothing and textile industry by Hustvedt and Bernard (2008), and Hustvedt, Peterson & Chen (2008) have shown that including information about fiber attributes helps consumers to better identify with products, thereby, creating a more favorable attitude.

Traceability acts as a tool of containment and protection for developing and less bric countries, as they face increased scrutiny compared to developed nations (Popper, 2007). In situations where it is difficult for consumers to judge the value and safety of a product through its appearance alone, traceability guides them through the 'credence factors' which consumers cannot otherwise experience at the point of sale, thereby, increasing their confidence (Hobbs *et al*., 2005; Golan *et al*., 2002; Moe, 1998; Resende-Filho & Buhr, 2007). Since the supply chain of global products includes numerous small processes at widely separated places, there is hidden geography in the production process (Popper, 2007). The knowledge of processes, and their impact on the environment, assures consumers about aspects that might otherwise not be revealed. Hence, the ability to offer a traceable record can bring customers a few steps closer to being confident in product choices. Olsen and Borit (2013), have suggested that a potential benefit of traceable products is an increased competitive advantage, beyond the standard desired intrinsic product attributes like price, quality, convenience, and brand name, traceability also relates to sustainability, ethics and low environmental impact. (Olsen & Borit, 2013). Considering the literature from the food industry, it can be expected that using traceable information as a signal for the fiber origin assures consumers about the genuineness of fiber quality or authenticity. Golan et al. (2004) showed how US food firms, by implementing traceability, created a better managed system, ensured quality over competitors, and guaranteed greater safety to consumers. Becker (2000) and Wall (1994) also reported that traceability was a quality signal in the food industry. Due to the asymmetric information shared between producers and consumers (Akerlof, 1970), initiatives are taken by manufacturers seeking to signal (Spence, 1973) its assimilation of

the quality and safety features into a product. Thus, to identify and trace information flow in a convenient manner, signaling mechanisms such as labels and certifications are used (Talamini, & Malafaia, 2006).

In an e-commerce environment, information shared via various promotional vehicles, such as webpages and advertisements, act as similar signaling mechanism. Since lack of trustworthiness has been noted as an issue in e-commerce transactions, researchers have highlighted the importance of providing transparent cues to enhance stakeholders' confidence (Riegelsberger, Sasse, and McCarthy, 2003). Information available on company's webpages can provide such cues while helping in consumers' search for information. Thus, in webpages, businesses might be able to assure their genuineness with traceable information. Including traceable information might also be helpful for reducing the growing cases of deceptions. Recent incidents of deceptive advertisements by Macy's Inc. and Amazon about contradictory fiber claims, or claims without qualifications, are specific examples to refer. In the food industry, the EU government failed to provide detailed information about food and their processing during the outbreak of bovine spongiform encephalopathy (BSE)[2], which increased doubts about food transparency and traceability (Baines and Davis, 1998). This resulted in urgent development of the traceable system which is now being extensively used to present a vivid record of all stages of a product from farm to development. This also helped to easy track products and their supply chain during product recalls (Dickinson & Bailey, 2002). Including traceable information may help companies to provide more qualifying details to track a product, which otherwise is difficult. Thus this can be expected to reduce the

deceptive claims, alerting businesses to be more cautious about their claims for textile products.

Like the food literature, recent research in textile and apparel (T&A) literature, suggests consumers are concerned about how and where apparel products are made, and want easily comprehensible transparent information (Bhaduri & Ha-Brookshire, 2011; Norum & Ha-Brookshire, 2011). As studied by Slavin (2009), the market of consumers seeking transparent information is expected to increase by almost 19% by 2014. Hustvedt and Dickson (2009) studied consumers' preferences regarding fiber content, and how such knowledge affects their purchase decisions. Hustvedt and Bernard (2008) reported of consumer preferences varying with products' fiber content and production methods. Almost 30% of one US sample was identified as showing their preference for US cotton that was transparently grown (Ha-Brookshire & Norum, 2011). Previous research found price to be an overriding attribute for any consumer when making a purchase decision (Ha-Brookshire & Norum, 2011). Hustvedt and Bernard (2008, 2010) reported consumers' preference and willingness to pay for products when available with detailed product information. Bhaduri and Ha-Brookshire (2011) showed consumers' interest for, not only transparent information, but also for accessible and reliable attributes of such information. Thus, the prior research has shown a consumer desire for traceable information that may affect their purchase behavior.

Fiber Origin/Farm traceability

Some consumers may be enthusiastic to obtain products specifically made by domestic firms, using locally grown fibers, and local manufacturing skills to help support domestic societies and the national economy (Ha-Brookshire, 2012). Prior research by

Nagashlma (1970), and Lillis and Narayana (1974) have shown that people are more inclined to buy products from their own country. Their study on US and Japanese consumers confirmed that consumers from both places had biased preferences for domestically produced goods. Similar findings have been reported by Bannister and Saunders (1978) about English consumers. Though, over time, most products have shifted to be multi-national in origin, researchers have still reported similar biases in today's globalization age (Ha-Brookshire & Norum, 2011). Fueled by environmental concerns (Kingsolver, 2007), after the 2009 economic downturn, indicated that the "local" movement gained strength by stressing the power of supporting local enterprises. (Norum & Ha-Brookshire, 2011). Bruwer and Johnson (2010) reported how people are eager to know about where products come from, and are willing to support local farm grown products. This trend is especially strong in the food industry where wineries and other business use local regions to enhance more brand popularity (Norum & Ha-Brookshire, 2011). Many U.S. consumers, seeking to help the domestic economy, perceive their preference for the local movement as exhibiting their social responsibility (Ha-Brookshire & Norum, 2011). Interestingly, previous research shows that consumers also perceive local or domestic products as having better quality and offering the least risk (Hooley et al., 1988). This may extend to apparel products made of US cotton (Ha-Brookshire & Norum, 2011). Thus the knowledge of fiber-origin may influence consumers' purchase preference.

Fiber farm in USA.

The U.S. is one of the largest cotton producing nations (Cotton Incorporated, 2010b) and its production capability is still growing, with an increase of 15% in cotton

production in 2010 over the previous year (Norum & Ha-Brookshire, 2011). Consumers perceive US cotton as symbol of quality (Ha-Brookshire & Norum, 2011) over other competing nations. Comparing to the popularity of locally grown food products, US cotton farmers also want their consumers to know more about the fiber they are wearing, to be aware of the fiber-origin, and how the fiber has been produced (Norum & Ha-Brookshire, 2011). Dickson (2001) found 16% of US consumers were interested in learning about labor and production practices in the apparel industry by using the labelling information to confirm their purchase decisions (Hustvedt & Bernard, 2008). In addition, a few studies have found value based labelling to be strongly effective in marketing of agricultural-based products. However, labelling for fiber origin in apparel is a more difficult a proposition (Hustvedt & Bernard, 2008). While the labelling requirement of specifying the manufacturing location on labels is mandatory by the U.S. government, there is generally no such stringent requirement of tracking the fiber origin. In fact, for manufacturers, it is challenging to ascertain the origin of the fiber in their products (Bilkey & Nes, 1982). With the trend toward tracing agricultural products to their farm of origin, and the importance of U.S. grown cotton to both producers and consumers, the traceability of U.S. cotton in apparel products is a topic ripe for exploration, and is one variable to be investigated in this study.

Factory Origin/Factory traceability

Several researchers have studied labor conditions, corporate labor standards, and fair labor demand in the apparel industry (Claxton & Ritchie, 1979; Emmelhainz & Adams, 1999). Studies have shown that consumers are concerned about sweatshop and labor conditions in the apparel manufacturing process (Harris, 1999). The National

Consumers League (1999) reported about 77% participants of their study, were interested in ensuring fair labor involvement in their apparel purchase, and about 55% of the participants were further ready to pay premium prices for clothes produced with fair labor conditions. Availability of such information empowers consumers to be assured about ethical labor conditions (Dickson, 2001), and impacts their attitudes and beliefs regarding clothing consumption (Shaw & Shiu, 2000). Studies by Hyllegard, Yan, Ogle, and Lee, (2012) and others have shown how consumers perceive hangtags and labels as effective signaling tool. Hyllegard et al. (2012) reported such behavior in 60% of study participants. Furthermore, consumers are willing to pay premium prices for apparel products based on availability of information about social and ethical labor involvement in making those products (Hustvedt and Bernard, 2008). However, it is difficult for both buyers and consumers to learn about the intermediate manufacturing conditions. By the U.S. law, all apparel products sold in the United States need to have a registered identification number (RN) which act as identifiers of the manufacturers, importers, distributers, or sellers of those products. But such information can't always be easily interpreted by consumers. While purchasing an apparel product, consumers have difficulties to access and interpret information about the factories involved, their labor conditions, sweatshop-free behaviors, their concern for labor's health hazards, employee satisfaction, or their infra-structure (Dickson, 2000; Tomolillo & Shaw, 2004). Thus, offering traceable information about the factory-origin of apparel products might impact consumers' purchase intentions, and will be examined in this study.

Country of Manufacturing

Country of manufacturing (origin) labels are a requirement for any apparel product sold to consumers in the United States. According to the Textile Fiber Products Identification Act, identifying the country of manufacturing for apparel goods is required by law (U.S. Federal Trade Commission, 2009). By this act, all textile and apparel products must specify the percentage of the generic fiber composition, the name or registered number of the manufacturing company, and the name of the country of manufacturing (U.S. Federal Trade Commission, 2009) It is a mandatory government policy to be followed by all manufacturing firms, but contains much more legal sophistication than being a mere mention of just the manufacturing country. It acts as perceived measure to signal different product qualities, based on the manufacturing country's development status (Bilkey & Nes, 1982).

Along with products' intrinsic features, consumers are also interested in products' extrinsic cues such as information about their manufacturing, design processes or various stages in the journey of products across the supply chain network (Singh et al, 2008). With their increased social and environmental awareness, and modern communication, consumers are interested in greater visibility and accessibility regarding these cues while purchasing apparel products (Bhaduri & Ha-Brookshire, 2011). The literature shows that consumers use information about country of origin to estimate benefits from products, and to evaluate their qualities and confirm their purchase behavior (Samiee, 1994). There is a tendency for consumers to evaluate their own country's products relatively more favorably than do foreigners (Bilkey & Nes, 1982). In fact, consumers' reliance upon their knowledge and preference of countries to develop their perceptions of product

quality has been summarized through the term ‘‘COO effect’’ (Han & Terpstra, 1988). However, it’s important to note that the current COO label rules refer to the nation only where the final product is manufactured, without giving information about the origin of fibers, or any intermediate processing (Samiee, 1994). Since most of the products in this globalized industry are hybrid or multinational in nature, inclusion of information on the source of fiber, design, assembly, part and manufacture as new levels of COO is expected to support the multi-national identity (Ha-Brookshire, 2012). Country of Manufacture refers to the country where materials are transformed into the final products (Essoussi & Mernuka, 2007; Insch & McBride, 1998). Thus, COM is the country used in apparel product labelling practices (Samiee, 1994).

Previous studies have shown that COM is frequently associated with patriotism, nationalism, ethnocentrism and preference of domestic goods over imported products (Bannister & Saunders, 1978; Drozdenko & Jensen, 2005). In some research, these terms have been linked to consumers’ anti-globalization involvement. In the US, mainly after September 11, consumers execute and show patriotism in much stronger ways (Lee *et* all, 2003), and the “local” movement has been viewed as an approach to save local jobs and local economics. The U.S. government is actively involved in getting manufacturing back to the U.S., and this movement has been coined as ‘reshoring’. Buying textile products made in America is perceived as socially responsible behavior (Ha-Brookshire & Norum, 2011). US consumers also use the country of manufacturing information to determine apparel quality, associating it with the economy of a country. Consumers prefer apparel made in developed countries relative to less developed countries (Dickerson 1982). For fashion products, requiring low technology skill, the study by Iyer and Kalita (1997)

confirmed that consumers' perceived value for products were significantly varied between developed and developing countries (Zhang, 2012). Given the COM is legally required on apparel products, and its use by consumers in purchase decisions, COM will be included as a variable in this study, along with the fiber-origin and factory-origin.

Ad Credibility

Credibility is described as the extent to which consumers consider a product as believable and trustworthy (MacKenzie and Lutz, 1989). Considering that traceability is comparable to identity preservation, generates trust and instills confidence among consumers, traceable information can be considered as important cues of credibility. They help to reaffirm valuable product attributes with details about various stages of the product supply chain. By providing such information, firms try to strengthen transparency, reliability, and assurance. The presence of such information may contribute to ad credibility and assure genuineness. Thus, traceable information availability is expected to act as persuasive force to increase ad credibility, which in turn acts as an important antecedent to develop a positive attitude towards the advertisement (MacKenzie and Lutz, 1989).

Attitude towards Advertisement (Webpages)

In the marketing literature, attitude towards an object is an important construct, and is described as individual's perceived understanding of the object. It is used to evaluate the object's benefits, and determine its effective usage. Hoyer and MacInnis (1997) explained attitude to be an overall assessment of any product, person, or issue, which sustains for a long period of time. Fishbein and Ajzen (1975) also defined attitude

as an ‘enduring predisposition’ considered by consumers to evaluate an object, and results in particular behaviors. Thus, attitude is a predictor for measuring and understanding consumers’ behavior towards an object or service or similar (Oskamp, 1999).

E-commerce has been a growing popular application of Internet and world-wide-web, and acts as an additional selling platform for textile and apparel industry. In an e-commerce environment, a company’s webpages act as one major advertisement tool contributing to successful business transactions. It acts as the promotional vehicle to convey information (Wang, Zhang, Choi, & D’Eredita, 2002), and develop a positive attitude towards advertisements among their consumers. Thus in this study, advertisements will be represented with webpages. Mackenzie, Lutz and Belch (1986) describes attitude towards advertisement (AaD) as “a predisposition to respond in a favorable or unfavorable manner to a particular advertising stimulus during a particular exposure situation” (Sallam & Wahid, 2012). Thus AaD refers to consumers’ general overall likings and reactions towards the ad, including aspects such as good/bad and pleasant/ unpleasant, and similar. But companies’ webpages are competing to gain their consumers’ focus and to intensify their attention by various means. Due to the growing number of online ads, businesses are struggling to gain consumers’ attention (Bogart, 1985). Similarly, lack of a face-to-face interaction is another concern in e-commerce transactions through their website, thus generating untrustworthiness. Considering these concerns, researchers have highlighted the importance of providing transparent cues to enhance consumers’ confidence (Riegelsberger, Sasse, and McCarthy, 2003), which can be used to generate positive attitudes. From consumers’ perspective, an ad needs to have

information relevant to their wants and requirements, so as to motivate them for further actions, generating a positive attitude. Information available on company's webpages can provide such cues while helping in consumers' search for information. Lavidge and Steiner (1961), described the effectiveness of an ad through its three functions. While the first function of an ad relates to shared knowledge and awareness through information, the next function indicates its impact on consumers' product attitudes, leading to its final function of a purchase transaction. Thus, in webpages, businesses might be able to assure their genuineness with traceable information, thereby, enhancing consumers' attitude towards their webpages impacting product attitude and/or their purchase intention (Wang, Zhang, Choi, and Eredita, 2002).

Attitude towards Product

An attitude towards product (AaP) can be described as an individual's predisposed idea about the product, its utility and benefits, his positive or negative evaluation in relation to acquiring and using the product (Chen, 2007). Smith, Tatum, Belk, Scanga, Grandin and Sofos (2005) indicated the impact of traceable information in reinforcing positive consumer confidence in products' and brands' strength and integrity. Informational cues about products' origin, compositional content, and their production procedures, contributes to reaffirm consumers' confidence, which in turn, strengthens their decision making abilities (de Jonge et al., 2008). Drawing from the food industry, and the textile and apparel (T&A) literature, traceability can be compared to quality certification, and an attribute that generates a more favorable product attitude (Ubilava & Foster, 2009; Hustvedt & Bernard, 2008; and Hustvedt, Peterson & Chen, 2008). Attitude towards a product is affiliated with the views of personal desirability towards purchasing

the product. Products with traceable information are perceived to generate more confidence in consumers about the source, quality and impact of a product purchase. Thus, consumers' attitude towards purchasing traceable apparel products is expected to be positively related to their attitude towards purchasing products with traceable information. Attitude is personal and subjective in nature. Previous researchers, including Hyllegard et al (2012), Koklic (2011), and Hartmann and Apaolaza-Ibáñez (2012) have found evidence that attitude relates to purchase intentions.

Purchase Intention for traceable products

Consumers' purchase intention can be defined as "the consumer's self-instruction to purchase the brand (or take another relevant purchase related action)" (Rossiter & Percy 1998, p 126). Purchase intention is considered as an immediate predecessor of purchase behavior and considered to be an indication of people's readiness to execute the behavior. As all behaviors cannot necessarily be voluntarily controlled, the construct of purchase intention is expected to predict attitude towards the actual purchase behavior (Bredahl, 2001). In keeping with Ajzen (1991), consumers' purchase intention for buying an apparel product is influenced by their overall attitude towards such apparel products available, and can be extended to products with traceable information. The expectation of outcomes resulting from buying traceable products are an important antecedent to purchase intention and thus the actual behavior. Thus, three sources of traceable information: farm, factory, and the COM, are expected to strongly impact consumers' purchase intentions for products marketed with traceable information (Bredahl, 2001).

Research gap, research hypotheses and conceptual model

As can be seen from the literature review, there has been prior research on how consumers' knowledge of country of origin, and fiber production methods, relate to consumers' purchase intentions. For the country of origin, it has been shown to influence the quality perceptions of a product (Bilkey & Nes, 1982). Previous researchers have studied country of origin relative to patriotism, and domestic good preferences, and have identified how knowledge of the country affects their purchase intentions and product attitudes. A few studies focused on sweatshop participation and social responsibilities of specific factories. However, since consumers' purchase intention are partially dependent on their subjective attitudes, different consumers vary with the amount of information they seek. Consumers have also been found to desire information on fiber-origin (Bhaduri, 2011). A few apparel companies like Levis Strauss & Co., and All American Clothing Co. are publishing such information to allow their customers to trace the products or their processes. However, the impact of traceable information in terms of generating positive consumers' attitude, affecting their perceived credibility, and persuading their intentions to purchase such textile and apparel (T&A) products, has not been explored. This study intends to gain a better understanding of whether traceable information affects various aspects of consumer behavior during an apparel purchase scenario. Specifically, this study is designed to examine the impact of the traceability of fiber-origin, factory-origin, and COM, on consumers' perceived ad credibility, attitudes towards apparel advertising, attitude towards the product, and purchase intentions.

From the above discussions, the following hypotheses are developed:

Hypotheses

H1: Products with farm-traceability compared to products with no farm-traceability, will be more positively related to:

a) Perceived ad credibility

b) Attitude towards advertisement (website)

c) Attitude towards product

d) Purchase intention

H2: Products with factory-traceability compared to products with no factory-traceability, will be more positively related to:

a) Perceived ad credibility

b) Attitude towards advertisement (website)

c) Attitude towards product

d) Purchase intention

H3: Products with the USA as their COM compared to products with China as their COM will be more positively related to:

a) Perceived ad credibility

b) Attitude towards advertisement (website)

c) Attitude towards product

d) Purchase intention

Traceability can have various levels of information, such as about farm-origin of fibers, the factory involved in production, country of manufacturing, country of design,

country of parts, and the country where the product is finally sold. This study focuses on the farm traceability, factory traceability, and country of manufacturing.

In addition to the direct effect of the independent variables on each dependent variable, interaction effects will also be tested. Considering people support for locally grown and locally manufactured products, it will be interesting to see how presence of both farm traceability and factory traceability information might increase consumers' perceived credibility, attitude, and preference for such products.

H4: Products with farm-traceability and factory-traceability compared to products with no farm, factory traceability will be more positively related to:

a) Perceived ad credibility
b) Attitude towards advertisement (website)
c) Attitude towards product
d) Purchase intention

Similarly when products are produced from locally grown fibers, and manufactured in a highly developed country, it is expected that the conjunctive presence of both such information will influence consumers to develop strong credibility, attitude, and hence, preference for such products.

H5: Products with farm-traceability and USA as COM compared to Chinese products with no farm traceability will be more positively related to:

a) Perceived ad credibility
b) Attitude towards advertisement (website)
c) Attitude towards product
d) Purchase intention

People support locally manufactured products due to perceived genuineness and pride in supporting local community and national economy. Hence, when factory-traceable information is present with a highly-developed manufacturing country, their conjunctive effect is expected to increase credibility, attitude, and hence, preference for such products.

H6: Products with factory-traceability and USA as COM compared to Chinese products with no factory traceability will be more positively related to:

a) Perceived ad credibility
b) Attitude towards advertisement (website)
c) Attitude towards product
d) Purchase intention

Similarly, all the three traceable information are also expected to interact with each other to have an overall increased positive effect on consumers. Thus, the following specific hypotheses were developed.

H7: Products with farm-traceability, factory-traceability, and USA as COM compared to Chinese products with no farm and factory traceability, will be more positively related to:

a) Perceived ad credibility
b) Attitude towards advertisement (website)
c) Attitude towards product
d) Purchase intention

Table 2.1 summarizes the hypotheses and Figures 2.1-2.4 illustrate the conceptual models developed based on the review of literature.

Table 2.1. Summary of the Hypotheses

	Ad Credibility	Attitude towards Ad	Attitude towards Product	Purchase Intention
Farm Traceability (or Farm)	+	+	+	+
Factory Traceability (or Factory)	+	+	+	+
COM as the USA (or USA)	+	+	+	+
Farm x Factory	+	+	+	+
Farm x COM	+	+	+	+
Factory x COM	+	+	+	+
Farm x Factory x USA	+	+	+	+

(+) indicates a positive increase as hypothesized.

Figure 2.1. Conceptual Model for Traceability affecting Ad Credibility

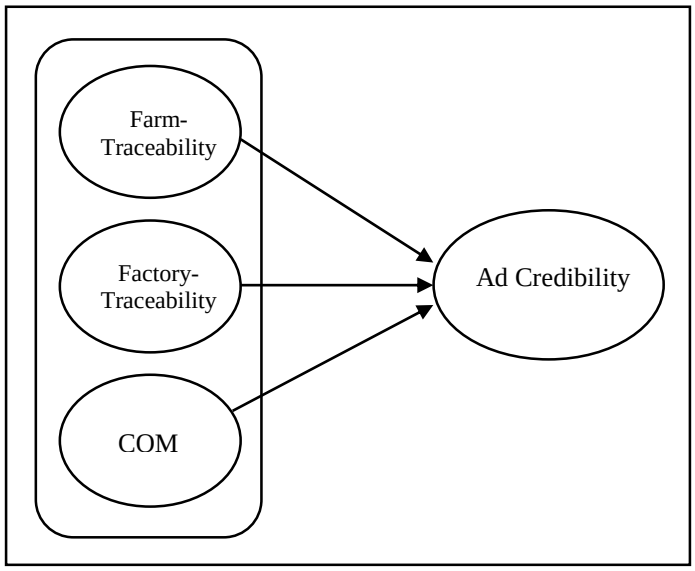


Figure 2.2. Conceptual Model for Traceability affecting Attitude towards Advertisement

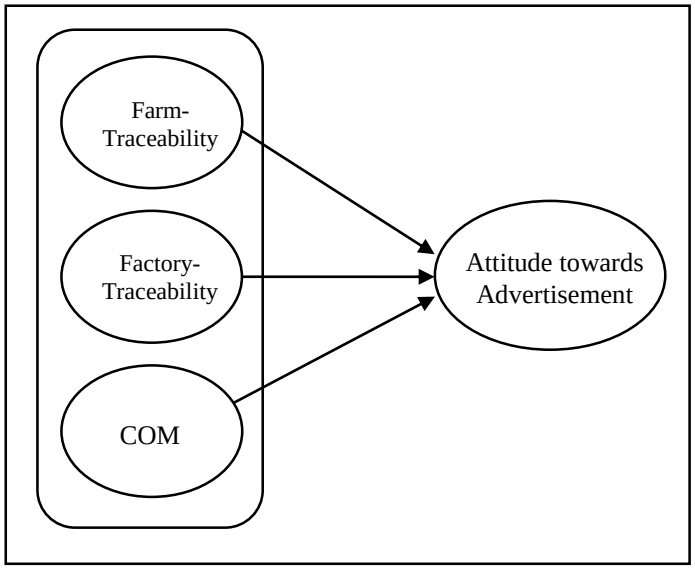


Figure 2.3. Conceptual Model for Traceability affecting Attitude towards Product

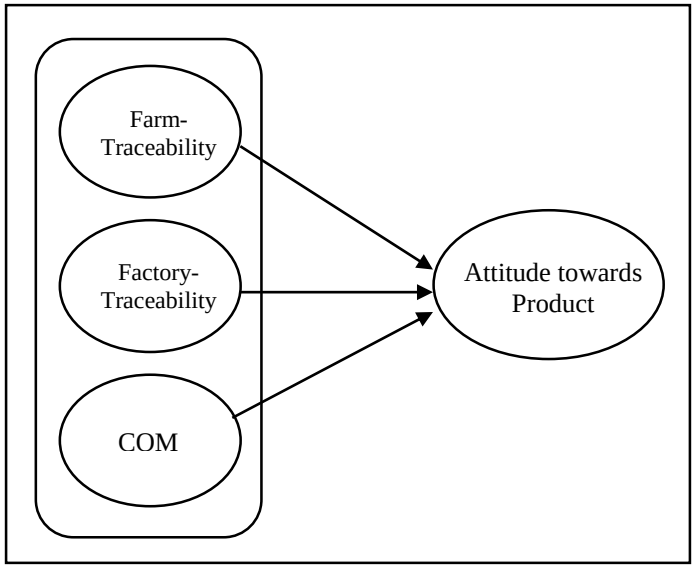
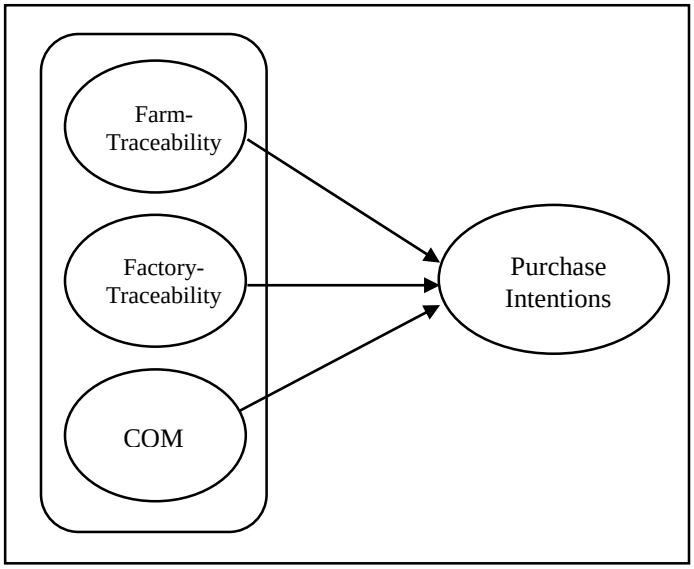


Figure 2.4. Conceptual Model for Traceability affecting Purchase Intention



CHAPTER III: RESEARCH METHODOLOGY

Chapter III provides the following sections: (a) research design; (b) stimulus materials; (c) variables; (d) manipulation check, (e) data collection; and (g) data analysis techniques.

Research Design

For this study, a 2 (fiber-origin: traceable/non-traceable) x 2 (factory-origin: traceable/non-traceable) x 2 (country of manufacture: America/China) design was used. Participants were exposed to total eight combinations of traceability and COM under the between-participants experimental design. Each participant was randomly exposed to only one combination of traceability of fiber-origin, factory-origin, and COM. The two dimensions of COM: Made in America and Made in China, were the repeated measures. A total of four combinations of traceability were profiled under each dimension of COM as presented in Tables 3.1 and 3.2.

Table 3.1. Manipulation Sets for USA

		COM: USA US cotton Farm-Traceability	
		Yes	No
Factory-Traceability	Yes	US Cotton traceable Factory Traceable USA	US Cotton not traceable Factory Traceable USA
	No	US Cotton Traceable Factory not traceable USA	US Cotton not traceable Factory not traceable USA

Table 3.2. Manipulation Sets for China

		COM: China US cotton Farm-Traceability Yes	COM: China US cotton Farm-Traceability No
Factory-Traceability	Yes	US Cotton traceable Factory Traceable China	US Cotton not traceable Factory Traceable China
	No	US Cotton Traceable Factory not traceable China	US Cotton not traceable Factory not traceable China

The non-traceable manipulation element will be the Control

Webpages with each treatment condition were created to give information details about traceability in the form of fiber origin and factory origin varying over the COM, and an online shopping environment was simulated.

Stimulus Materials

All the webpage stimuli were designed by the researcher, keeping the contents visually similar to a regular e-retailing website product page. The text describing the traceable information was added to correspond to the product advertised. The traceable information was controlled so that it was not biased, and couldn't be portrayed as value-addition to the apparel product. The information content was kept similar for different stimuli to reduce error.

This study specifically focuses on only US cotton and its traceability. For farm traceability, the manipulation only recognizes the basic fiber as a requirement of apparel labelling requirement. For products traceable to fiber-origin, the dimensions of traceability as considered in this study are a farm's county and state, contact farmer,

number of years in farming, and acres of farm land. The county and state would help consumers to specifically narrow down and identify the farm. Similarly, identifying farmers with specific details like contact information, farming experience over the years, and acres of land, would help consumers to relate the information with genuineness.

For traceability to factory-origin, factory was identified by its unique identification name, contact details, address, and years in business. The name and contact details will reinforce the validity and accessibility of the factory involved in manufacturing the product.

The country of manufacture for the apparel product was shown as the United States or China. For the foreign country, China was selected for several reasons. China is the leading importer of US cotton, importing over half of US produced cotton (United States Department of Agriculture, 2011). It is also the leading cotton apparel exporter to the United States, with the US importing more than 27% of its cotton apparel from China in 2008. (Cotton Incorporated, 2009). Thus, as an important competitor and business partner to US in cotton, and as a lesser developed country, China had been considered an appropriate foreign country to use in this study.

Eight webpages representing four combinations of traceability for each COM were created, and the four combinations were categorized as:

- Farm traceable/Factory traceable: maximum traceability is reflected through identifying the farms' county and state where the cotton fiber was grown, farmers' name, contact details along with factories' name, contact details, address, and manufacturers' years in business for producing apparel products..

- Farm not traceable/ factory traceable: partial traceability where the company fails to identify and offer information about the fiber origin, but does identify the factory by its unique name and other details.
- Farm traceable/ factory not traceable: partially traceable where the company identifies the fiber origin, with their county and state, the contact farmer and other details, but does not identify information about the factory. The manipulation shows no information about the factory involved for manufacturing the apparel.
- Farm not traceable/ factory not traceable: no traceability offered, where the manipulation doesn't identify the fiber or factory origin. This is the control factor, and represents the current labelling rules as per Textile Fiber Products Identification Act, by identifying only the country of manufacturing.

E-retailing is generally criticized as a platform of intangible products (Bikra, 2008) affecting consumers' confidence regarding product quality and assurance (Azam, 2012). Thus, availability of traceable information provides informative cues regarding apparel products, and is expected to affect participants' purchase intentions. The webpage stimuli developed for this study are shown in Appendix A.

Previous research shows that significant intrinsic product values, like style, color, and product features along with other extrinsic factors like brand name, product guarantee are more important factors relative to traceability of information and COM (Dickson & Littrell, 1996, Kim et al., 1999). Hence, such values will be held constant by using one specific apparel product: a pair of denim jeans.

Dependent Variables

There are four dependent variables to be measured in this study, ad credibility, attitude towards website (advertisement), attitude towards products, and purchase intention.

Ad credibility.

In this study, ad credibility referred to consumers' belief or perceived trust in presence of traceable information on webpages. This reflected consumers' perceived credibility as believable, truthful, and realistic. These measurement items are adapted from Cotte, Coulter, and Moore, (2005). They are measured on a 7-point Likert scale with anchors of 1 as strongly disagree and 7 as strongly agree. The reliability of these scales ranged from 0.84 to 0.87 (Cotte, Coulter, & Moore, 2005).

Attitude towards website.

For this study, website is considered equivalent to a promotional vehicle or an advertisement. This reflected consumers' evaluation of advertisements as being good/bad, favorable/unfavorable, pleasant/unpleasant, and likeable/unlikeable, 4-items often used for attitudinal studies. These measurement items are adapted from MacKenzie and Lutz, (1989). The original scale was designed for measuring attitude towards advertisements. The word 'advertisement' was replaced with 'website' to cater to the study. These items are measured on a 7-point Likert scale with anchors of 1 as strongly disagree and 7 as strongly agree. The reliability of these scales ranged from 0.89 to 0.94 (MacKenzie & Lutz, 1989).

Attitude towards product.

This reflected consumers' evaluation as good/bad, favorable/unfavorable, pleasant/unpleasant, and likeable/unlikeable for products with traceable information. These 4-items are also adapted from the same scale of attitude towards ad by MacKenzie and Lutz, (1989), by replacing 'advertisement' with the product, 'jeans'. These items are measured on a 7-point Likert scale with anchors of 1 as strongly disagree and 7 as strongly agree. The reliability of these scales ranged from 0.89 to 0.96 (MacKenzie & Lutz, 1989).

Purchase Intention.

To measure purchase intention, the consumers were asked to indicate their likeliness to purchase clothes with traceable information, if priced favorably and if available, and to refer it to a friend, in the future. It was measured using 3-items scale adapted from Hyllegar, Yan, Ogle, and Lee (1999) and Chen (2007), on a 7-point scale from 1 anchored as definitely not to 7 anchored as definitely. The original scales were adapted to include affordable price and availability, to match the purpose of the study. The reliability of scales ranged from 0.83 to 0.96.

Manipulation check (Mean Difference between Stimuli)

To determine the effectiveness of the developed stimuli, a manipulation check was conducted with 38 participants. Their feedback was analyzed and some adjustments were made to the wordings of stimuli accordingly. Participants were randomly exposed to stimuli cases, with each participant being exposed to only one case. The total number of respondents were equally distributed among the eight cases. Cases were recoded based on

their presence and absence of farm, factory traceability and COM. Responses were analyzed comparing their mean difference through t-tests for traceability variables: farm traceability, factory traceability, and COM. The results indicated that means for traceability/non-traceability were significantly different for farm traceability [t(19)= 6.031, $p < 0.001$], factory traceability [t(19) = 4.974, $p<0.001$], and COM [t(19)= 11.305, $p<0.001$].

Table 3.3. Summary of the t-test analysis for manipulation check

Variables	df	Mean difference	t-value	Sig (2-tailed)
Farm-traceability	36	-5.47	-6.031	<0.000
Factory-traceability	36	-5.68	-4.974	<0.000
COM	36	4.45	11.305	<0.000

Data collection

After approval from the Institutional Review Board, experiment participants were recruited through advertisements in the crowdsourcing (Howe, 2006) platform of Amazon Mechanical Turk. It is an online platform providing researchers with access to a persistently available US participant population.

A crowdsourcing platform can be described as a portal for jobs outsourced to an undefined group of people and are openly accessible (Howe, 2006). Amazon Mechanical Turk (AMT) is a similar online portal, mainly preferred by behavioral researchers, and offers access to a large population of research participants at comparatively low compensations (Mason & Suri, 2012). A student sample has the limitation of not representing a heterogeneous US adult population (Sear 1986). Thus, researchers are

restoring to inexpensive, and easily accessible non-probability samples but that are not limited to students. Researchers have used AMT in previous studies. Erikson and Simpson (2010) studied gender, and the culture for risk preferences. Suri and Watts (2011) used it to study the relationships between social dilemmas and networks (Mason & Suri, 2012). Berinsky and colleagues (2012) have supported participants' viability recruited from AMT (Cassese, Huddy, Hartman, Mason & Weber, 2013). Thus, a literature review shows the validity of AMT and its accepted use in an experimental research environment. Participants from this online portal offer an access to diverse population, and their response to experimental stimuli exposure have been found to be consistent in prior studies (Cassese et al., 2013).

A total of 640 participants volunteered for this study, a between-participant experiment design, in which they were exposed to treatments arranged as 2x2x2 factorial. Equal number of participants were recruited and exposed randomly to each of the eight stimuli conditions. For the study, participants were compensated with $0.50, on successful completion of the entire survey. Before beginning the main online study, the respondents were given a brief description about the purpose of the study. Voluntary participation and participatory compensation were highlighted. Information about participants' withdrawal for unwillingness to reply, anonymous participation, confidentiality of the data, and no associated risks were assured. The consent form had the above information explicitly listed in it, and participants willing to volunteer for the study, were thus required to read and confirm their approval of it. For the purpose of the study, participants were recruited based on their denim purchase behavior in the past one year or an expected behavior in the recent future. Participants were exposed randomly to

one of the eight designed stimuli of an apparel company's website. Based on the exposure, participants had to answer the survey questions. A total of 552 responses were finally shortlisted as usable data. A validity check question was also introduced in between the survey, to check and control the chances of participants' random responses. The demographic questions were included at the end of survey.

Data Analysis

The process of successful data collection was followed by data analysis using the Statistical Package for the Social Sciences (SPSS) software. Participants' demographics were analyzed with descriptive statistics to obtain a characteristics profile of the respondents. Participants' age, gender, employment, and other demographic characteristics were analyzed using frequencies and percentages. The effect, if any, of traceable information and COM on consumers' perceived ad credibility, attitude towards webpages, attitude towards product and purchase intentions were analyzed through analysis of variance (ANOVA).

CHAPTER IV: RESULTS

Chapter IV includes (a) description of the sample including demographic characteristics; (b) scale reliability; (c) ANOVA results; (d) additional analysis for gender, and (e) summary of results.

Description of the Sample

For the experiment, a total of 640 participants were recruited through the AMT platform. Out of 640 respondents, 88 respondents were excluded due to missing or bad data. Bad data referred to respondents, who either indicated through a screening question that they had not purchased denim in the past one year, nor plans of purchase in recent the future, or who did not answer all questions. This resulted in a total of 552 usable survey responses. Table 4.1 presents the demographic characteristics of the sample. Respondents consisted of 199 (36.1%) females and 350 (63.4%) males. Participants' age range was widely distributed from 18 to above 65. Sixteen (2.9%) participants were of ages 18 and 21, 369 (66.8%) participants were of ages 22 and 34, 94 (17%) participants were of ages 35 and 44, 49 (8.9%) participants were of ages 45 and 54, 17 (3.1%) participants were of ages 55 and 64, and 7 (1.3%) participants were of ages 65 and above. Out of 552, 80 (14.5%) participants were students, 91 (16.5%) participants were part-time employed, 295 (53.4%) were full-time employed, 9 (1.6%) were retired, and 77 (13.9%) participants were not employed. The study participants represented 413 (74.8%) Caucasians, 34 (6.2%) African Americans, 31 (5.6%) Hispanic, 66 (12%) Asians, 8 (1.4%) of other ethnic origins. Over three hundred (334 or 60.5%) participants had college as their highest educational level, 3 (0.5%) had less than a high school education,

158 (28.6%) were high school graduates, 57 (10.3%) were college graduates. Of the 552 participants, 371 (67.2%) were unmarried and 181 (32.8%) were married.

Scale Reliability

The reliability of the 3-item ad credibility scale was 0.883 (Cronbach's α), and the reliability of the 4-item attitude towards advertisement scale was 0.940 (Cronbach's α). The reliability of the 3-item attitude towards product scale was 0.956 (Cronbach's α), and for purchase intention, the reliability of the 3-item scale was 0.827 (Cronbach's α). Table 4.2 contains the reliability measures for the dependent variables used in the study.

Analysis of Variance (ANOVA) Results

The results from the analysis of variance are presented in Tables 4.3.1 – 4.3.12. The results are discussed in light of the earlier stated hypotheses.

For ad credibility, COM was the only variable to have statistically significant mean difference [$F(1,544)=13.275$, $p<0.001$]. Participants who were exposed to webpages with COM as the USA had a higher mean (5.635) ad credibility than participants when exposed to webpages with COM as China (mean=5.322). Other traceability factors of farm and factory did not generate any significant mean difference in perceived ad credibility.

Table 4.1. Survey respondents' Demographic characteristics

Variable	Frequency	Percentage
Gender		
Male	350	63.40
Female	199	36.10
Ethnicity		
Caucasian	413	74.80
African American	34	6.20
Hispanic	31	5.60
Asian	66	12.00
Others	8	1.40
Age		
21 and Under	16	2.90
22 to 34	369	66.80
35 to 44	94	17.00
45 to 54	49	8.90
55 to 64	17	3.10
65 and Over	7	1.30
Marital Status		
Unmarried	371	67.20
Married	181	32.80
Education Level		
Less than high school	3	0.50
High School	158	28.60
College	334	60.50
Graduate School	57	10.30
Occupation		
Student	80	14.50
Part-time employed	91	16.50
Full-time employed	295	53.40
Retired	9	1.60
Not Employed	77	13.90
Annual Household Income		
Less than $10, 000	45	8.15
$10,000 - $29,999	308	55.79
$30,000 - $49,999	89	16.12
$50,000 - $69,999	66	11.95
$70,000 - $89,999	24	4.34
$90,000 - $149,999	18	3.26
$150,000 or above	2	0.36

Note. Total number of participants = 552

Table 4.2. Reliability of scales

Scale	Number of items	Reliability (Cronbach's α)
Ad Credibility I consider the above website to be believable I consider the above website to be truthful I consider the above website to be realistic	3	0.883
Attitude towards advertisement I consider the above website to be : Bad/good Unfavorable/favorable Unpleasant/pleasant Unlikeable/likeable	4	0.940
Attitude towards the product I consider the above jeans to be : Bad/good Unfavorable/favorable Unpleasant/pleasant	3	0.956
Purchase Intention If the jeans were priced at a price you were willing to pay, will you purchase clothing from The Denim Company? If the jeans were priced at a price you were willing to pay, will you tell a friend about The Denim Company? If products with farm and factory information are available in the shops, I would intend to buy it.	3	0.827

Attitude towards advertisement was found to be significantly different in presence and absence of farm traceability [F(1,544)=16.113, p<0.001]. When participants were exposed to webpages having farm-traceable information, their mean AaD was significantly higher (mean=5.271) than when participants exposed to webpages with 'no farm-traceability' (mean=4.926). Similarly AaD was found to be significantly different for COM as USA and COM as China [F(1,544)= 27.614, p<0.001]. When webpages had information about COM being USA, respondents had a higher mean attitude towards the ad (mean=5.324), compared to when webpages had information about COM being China (mean=4.872).

Attitude towards product was found to be significantly different for COM as USA and China [F(1,544)=13.769, p<0.001]. When participants were exposed to 'Made in USA' products, they had higher mean attitude towards products (mean=5.170), compared to when participants were exposed to 'Made in China' products (mean=4.640).

Finally, purchase intention was found to be significantly different for COM as USA and China [(F(1,544)=19.860, p<0.001]. When participants were exposed to 'Made in USA' products, they had higher mean purchase intention (mean=5.286), compared to when participants were exposed to 'Made in China' products (mean=4.774).

Table 4.3.1. ANOVA for Mean Difference in Ad Credibility

IV	Sum of Squares	df	Mean-Squares	F-value	Sig.	Partial eta-squared
FarmTrac	1.747	1	1.747	1.708	0.192	0.003
FactTrac	0.954	1	0.954	0.932	0.335	0.002
COM	13.579	1	13.579	13.275	<0.000	0.024
FarmTrac x FactTrac	0.026	1	0.026	0.025	0.873	0.000
FarmTrac x COM	1.464	1	1.464	1.431	0.232	0.003
FactTrac x COM	1.932	1	1.932	1.889	0.170	0.003
FarmTrac x FactTrac x COM	0.473	1	0.473	0.463	0.497	0.001

Table 4.3.2. Mean and Standard Deviation of Ad Credibility

Dependent Variable	Variables	Levels	Mean	Standard Deviation
Ad Credibility	Farm-Origin	Traceable	5.422	0.959
		Non-traceable	5.535	1.083
	Factory-Origin	Traceable	5.52	1.000
		Non-traceable	5.437	1.045
	COM	USA	5.635	0.933
		China	5.322	1.084

Table 4.3.3. Mean and Standard Deviation of Ad Credibility based on Interaction

Dependent Variable	Card	Farm-traceability	Factory-traceability	COM	Mean	Standard Deviation
Ad Credibility	1	Traceable	Traceable	USA	5.763	0.875
	2	Traceable	Non-traceable	USA	5.514	0.930
	3	Non-traceable	Traceable	USA	5.709	0.981
	4	Non-traceable	Non-traceable	USA	5.552	0.942
	5	Traceable	Traceable	China	5.376	0.938
	6	Traceable	Non-traceable	China	5.484	1.061
	7	Non-traceable	Traceable	China	5.232	1.122
	8	Non-traceable	Non-traceable	China	5.195	1.203

Table 4.3.4. ANOVA for Mean Difference in Attitude towards Advertisement

IV	Sum of Squares	df	Mean-Squares	F-value	Sig.	Partial eta-squared
FarmTrac	16.403	1	16.403	16.113	<0.000	0.029
FactTrac	1.331	1	1.331	1.307	0.253	0.002
COM	28.111	1	28.111	27.614	<0.000	0.048
FarmTrac x FactTrac	2.867	1	2.867	2.816	0.094	0.005
FarmTrac x COM	2.468	1	2.468	2.425	0.12	0.004
FactTrac x COM	0.039	1	0.039	0.038	0.845	0.000
FarmTrac x FactTrac x COM	0.656	1	0.656	0.645	0.422	0.001

Table 4.3.5. Mean and Standard Deviation of Attitude towards Advertisement

Dependent Variable	Variables	Levels	Mean	Standard Deviation
Attitude towards Ad	Farm-Origin	Traceable	5.271	0.968
		Non-traceable	4.926	1.099
	Factory-Origin	Traceable	5.147	1.001
		Non-traceable	5.049	1.093
	COM	USA	5.324	0.931
		China	4.872	1.110

Table 4.3.6. Mean and Standard Deviation of AaD due to interaction

Dependent Variable	Card	Farm-traceability	Factory-traceability	COM	Mean	Standard Deviation
Attitude towards advertisement	1	Traceable	Traceable	USA	5.449	0.956
	2	Traceable	Non-traceable	USA	5.409	0.958
	3	Non-traceable	Traceable	USA	5.313	0.808
	4	Non-traceable	Non-traceable	USA	5.123	0.984
	5	Traceable	Traceable	China	5.046	0.999
	6	Traceable	Non-traceable	China	5.178	0.919
	7	Non-traceable	Traceable	China	4.780	1.117
	8	Non-traceable	Non-traceable	China	4.486	1.270

Table 4.3.7. ANOVA for Mean Difference in Attitude towards Product

IV	Sum of Squares	df	Mean-Squares	F-value	Sig.	Partial eta-squared
FarmTrac	1.139	1	1.139	0.405	0.525	0.001
FactTrac	0.282	1	0.282	0.100	0.752	0.000
COM	38.738	1	38.738	13.769	<0.000	0.025
FarmTrac x FactTrac	6.528	1	6.528	2.320	0.128	0.004
FarmTrac x COM	0.051	1	0.051	0.018	0.893	0.000
FactTrac x COM	0.36	1	0.360	0.128	0.721	0.000
FarmTrac x FactTrac x COM	3.276	1	3.276	1.164	0.281	0.002

Table 4.3.8. Mean and Standard Deviation of Attitude towards Product

Dependent Variable	Variables	Levels	Mean	Standard Deviation
Attitude towards product	Farm-Origin	Traceable	4.950	1.997
		Non-traceable	4.859	1.318
	Factory-Origin	Traceable	4.927	1.299
		Non-traceable	4.882	2.017
	COM	USA	5.170	1.232
		China	4.640	2.022

Table 4.3.9. Mean and Standard Deviation of AaP due to interaction

Dependent Variable	Card	Farm-traceability	Factory-traceability	COM	Mean	Standard Deviation
Attitude towards product	1	Traceable	Traceable	USA	5.087	1.375
	2	Traceable	Non-traceable	USA	5.362	1.077
	3	Non-traceable	Traceable	USA	5.349	1.071
	4	Non-traceable	Non-traceable	USA	4.881	1.342
	5	Traceable	Traceable	China	4.641	1.376
	6	Traceable	Non-traceable	China	4.710	3.303
	7	Non-traceable	Traceable	China	4.633	1.232
	8	Non-traceable	Non-traceable	China	4.575	1.478

Table 4.3.10. ANOVA for Mean Difference in Purchase Intention

IV	Sum of Squares	df	Mean-Squares	F-value	Sig.	Partial eta-squared
FarmTrac	3.328	1	3.328	1.828	0.177	0.003
FactTrac	0.284	1	0.284	0.156	0.693	0.000
COM	36.154	1	36.154	19.86	<0.000	0.035
FarmTrac x FactTrac	1.667	1	1.667	0.916	0.339	0.002
FarmTrac x COM	0.889	1	0.889	0.488	0.485	0.001
FactTrac x COM	0.943	1	0.943	0.518	0.472	0.001
FarmTrac x FactTrac x COM	0.483	1	0.483	0.265	0.607	0.000

Table 4.3.11. Mean and Standard Deviation of Purchase Intention

Dependent Variable	Independent Variable	Levels	Mean	Standard Deviation
Purchase Intention	Farm-Origin	Traceable	5.108	1.403
		Non-traceable	4.952	1.333
	Factory-Origin	Traceable	5.053	1.414
		Non-traceable	5.007	1.325
	COM	USA	5.286	1.239
		China	4.774	1.446

Table 4.3.12. Mean and Standard Deviation of Purchase Intention due to interaction

Dependent Variable	Card	Farm-traceability	Factory-traceability	COM	Mean	Standard Deviation
Purchase Intention	1	Traceable	Traceable	USA	5.362	1.436
	2	Traceable	Non-traceable	USA	5.285	1.172
	3	Non-traceable	Traceable	USA	5.338	1.151
	4	Non-traceable	Non-traceable	USA	5.159	1.198
	5	Traceable	Traceable	China	4.789	1.593
	6	Traceable	Non-traceable	China	4.995	1.328
	7	Non-traceable	Traceable	China	4.722	1.343
	8	Non-traceable	Non-traceable	China	4.591	1.496

Thus, these results show that presence of farm traceability compared to products with no farm traceability, was more positively related to attitude towards ad, supporting hypothesis H1a. Similarly, products with the USA as their COM compared to products with China as their COM was more positively related to respondents' purchase intention. Thus the results supported hypotheses H3 (a-d). However no statistical significant mean differences were observed for other proposed hypotheses, and were thus not supported. Also as hypothesized, farm-traceability, factory-traceability, and COM did not interact with each other for all four dependent variables. Therefore, hypotheses 4 (a-d), 5 (a-d), 6 (a-d), and 7 (a-d) were also not supported.

Additional Analyses for Gender

In textile and apparel research literature, females have generally comprised a larger proportion of the sample used by researchers. However, in this study the distribution of gender among participants was different, with approximately 64% males, and 36% females. Although the literature has not documented gender differences regarding the effects of traceability on attitudes, a gender interaction was further examined given the nature of the sample. Hence the effects of gender, if any, on the dependent variables was analyzed, by comparing the mean difference of males and females on both main effects and the interaction effects.

Mean Difference between Male and Female

Independent sample t-tests were conducted to test for mean differences in responses between male and female participants on the dependent variables. Results

indicated there were no significant differences (main effects) based on participants' gender for any of the dependent variables.

Table 4.5.1. Independent Sample t-test for male and female participants

			t-test for Equality of Means	
Dependent Variable	**Gender**	**Mean**	**t**	**Sig.**
Ad Credibility	Male	5.4857	0.142	0.887
	Female	5.4724		
Attitude towards Ad	Male	5.0843	-0.451	0.652
	Female	5.1269		
Attitude towards Product	Male	4.915	0.154	0.878
	Female	4.8882		
Purchase intention	Male	4.961	-1.492	0.136
	Female	5.1491		

However, gender did interact with the independent variables of traceability (farm-traceability, factory traceability, and COM) to generate varied significant effects on the dependent variables.

For the ad credibility, gender significantly interacted with factory-traceability [$F(1,533)=8.616$, $p=0.003$]. When webpages were factory traceable, female participants had a higher mean ad-credibility (mean=5.708) than male participants (mean=5.438). When webpages were not factory traceable, interestingly male participants reported of higher ad credibility (mean=5.539) than female participants (mean= 5.283). Females' mean ad credibility when exposed to factory-traceable webpages was higher (mean=5.708) than when exposed to non-factory-traceable webpages (mean=5.283). For males, mean ad credibility did not differ much with presence (mean=5.438) or absence (mean=5.539) of factory-traceable information.

Similarly, gender interacted with COM to create a significant mean difference in ad credibility [F(1,533)=3.557, p=0.06]. When webpages had information about COM being USA, female participants had a higher ad-credibility (mean=5.768) than male participants (mean=5.592). When webpages had COM as China, interestingly male participants reported of higher ad credibility (mean=5.385) than female participants (mean= 5.223). Females' mean ad credibility for webpages with COM being USA was higher (mean=5.768) than for webpages with COM being China (mean=5.223). Males' mean ad credibility for webpages with COM being USA was higher (mean=5.592) than for webpages with COM being China (mean=5.385).

The two-way interaction of gender with farm traceability did not have statistically significant differences on ad credibility. The three-way interaction of gender with farm and factory traceability, farm traceability and COM, factory traceability and COM did not generate statistically significant differences on ad credibility. The four-way interaction of gender with farm traceability, factory traceability and COM, did not generate statistically significant differences on ad credibility. Table 4.5.2 presents the ANOVA results for mean difference in ad credibility due to gender. Table 4.5.3 and 4.5.4 present descriptive statistics (mean and standard deviation) of ad credibility due to gender's main effect and its interaction.

Table 4.5.2. ANOVA for mean difference in Ad Credibility Due to Gender

Independent Variable	Sum of Squares	df	Mean-Squares	F-value	Sig.	Partial eta-squared
FarmTrac	0.680	1	0.68	0.676	0.412	0.001
FactTrac	3.297	1	3.297	3.276	0.071	0.006
COM	17.663	1	17.663	17.551	<0.000	0.032
Gender	0.006	1	0.006	0.006	0.940	0.000
FarmTrac x FactTrac	0.003	1	0.003	0.003	0.956	0.000
FarmTrac x COM	1.414	1	1.414	1.405	0.236	0.003
FarmTrac x Gender	2.461	1	2.461	2.445	0.118	0.005
FactTrac x COM	1.872	1	1.872	1.86	0.173	0.003
FactTrac x Gender	8.671	1	8.671	8.616	0.003	0.016
COM x Gender	3.580	1	3.58	3.557	0.060	0.007
FarmTrac x FactTrac x COM	0.358	1	0.358	0.355	0.551	0.001
FarmTrac x FactTrac x Gender	1.878	1	1.878	1.866	0.173	0.003
FarmTrac x COM x Gender	0.019	1	0.019	0.018	0.892	0.000
FactTrac x COM x Gender	0.169	1	0.169	0.168	0.682	0.000
FarmTrac x FactTrac x COM x Gender	0.002	1	0.002	0.002	0.964	0.000

Table 4.5.3. Mean and Standard Error of Ad Credibility due to Gender

Dependent Variable	Independent Variable	Levels	Mean	Standard Error
Ad Credibility	Farm-Traceability	Traceable	5.455	0.065
		Non-traceable	5.529	0.062
	Factory-Traceability	Traceable	5.573	0.064
		Non-traceable	5.411	0.062
	COM	USA	5.68	0.064
		China	5.304	0.063

Table 4.5.4. Mean and Standard Error of Ad Credibility due to Gender interaction

Independent Variable	Levels	Gender	Mean	Standard. Error
Factory Traceability	Non-traceable	Female	5.283	0.098
		Male	5.539	0.077
	Traceable	Female	5.708	0.105
		Male	5.438	0.075
COM	China	Female	5.223	0.101
		Male	5.385	0.076
	USA	Female	5.768	0.102
		Male	5.592	0.076

Figure 4.1. Plot Diagram for Gender Interacting with Factory Traceability affecting Ad Credibility

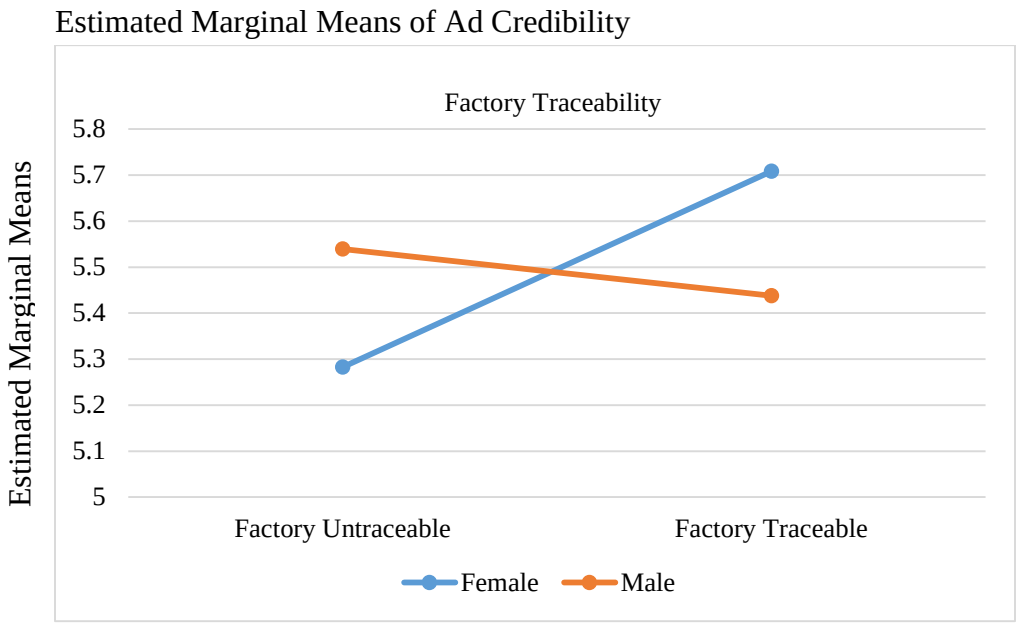
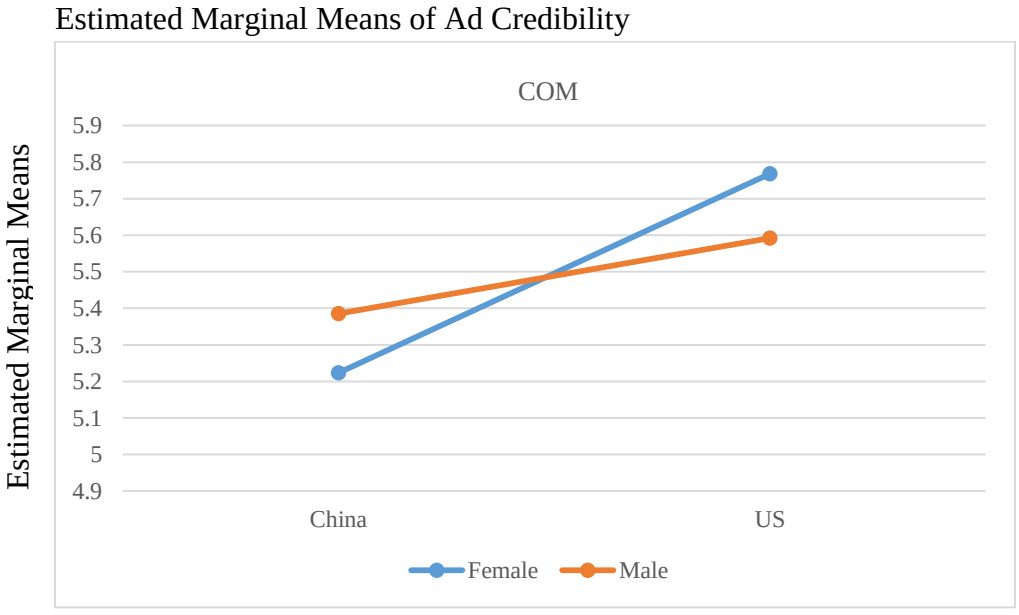


Figure 4.2. Plot Diagram for Gender Interacting with COM affecting Ad Credibility



For attitude towards advertisement, gender interacted with farm traceability and factory traceability to create a significant mean difference in attitude towards

advertisements [F(1,533)=4.907, *p*=0.027]. When webpages had both farm-traceable and factory-traceable information, female participants had a higher AaD (mean=5.471) than male participants (mean=5.120). When webpages had neither factory traceability nor farm traceability, female participants had a higher AaD (mean=4.875) than male participants (mean=4.763). When webpages had farm as traceable, but factory as non-traceable, interestingly male participants reported of higher Aad (mean=5.400) than female participants (mean=5.132). When webpages had farm as not traceable, but factory as traceable, female participants did not differ much in their AaD (mean=5.012) than male participants (mean=5.079). Female participants had higher AaD for webpages with both farm and factory traceability (mean=5.471) than for webpages with no farm and factory traceability (mean=4.875). They reported of higher AaD for webpages with farm-traceability and no-factory-traceability (mean=5.132) than for webpages with no-farm-traceability and factory-traceability. Male participants had higher AaD for webpages with both farm and factory traceability (mean=5.120) than for webpages with no farm and factory traceability (mean=4.763). They reported of higher AaD for webpages with farm-traceability and no-factory-traceability (mean=5.400) than for webpages with no-farm-traceability and factory-traceability (mean=5.079). So male participants had higher AaD for webpages with farm-traceability and no-factory-traceability than for webpages with both farm and factory traceability. The two-way interaction of gender with farm traceability, factory traceability, and COM did not have statistically significant differences on AaD. The three-way interaction of gender with farm traceability and COM, factory traceability and COM did not generate statistically significant differences on AaD. The four-way interaction of gender with farm traceability, factory traceability

and COM, did not generate statistically significant differences on AaD. Table 4.5.5 presents ANOVA results for mean difference in attitude towards ad due to gender. Table 4.5.6 and 4.5.7 present descriptive statistics (mean and standard deviation) of attitude towards ad due to gender's main effect and its interaction.

Table 4.5.5. ANOVA for mean difference in AaD Due to Gender

IV	Sum of Squares	df	Mean-Squares	F-value	Sig.	Partial eta-squared
FarmTrac	15.202	1	15.202	14.956	<0.000	0.027
FactTrac	2.047	1	2.047	2.014	0.156	0.004
COM	31.839	1	31.839	31.325	<0.000	0.056
Gender	0.130	1	0.130	0.128	0.721	0.000
FarmTrac x FactTrac	1.210	1	1.210	1.191	0.276	0.002
FarmTrac x COM	2.531	1	2.531	2.490	0.115	0.005
FarmTrac x Gender	0.012	1	0.012	0.012	0.913	0.000
FactTrac x COM	0.204	1	0.204	0.201	0.654	0.000
FactTrac x Gender	1.513	1	1.513	1.489	0.223	0.003
COM x Gender	2.402	1	2.402	2.363	0.125	0.004
FarmTrac x FactTrac x COM	0.251	1	0.251	0.247	0.619	0.000
FarmTrac x FactTrac x Gender	4.988	1	4.988	4.907	0.027	0.009
FarmTrac x COM x Gender	0.013	1	0.013	0.013	0.909	0.000
FactTrac x COM x Gender	0.022	1	0.022	0.022	0.882	0.000
FarmTrac x FactTrac x COM x Gender	0.741	1	0.741	0.729	0.394	0.001

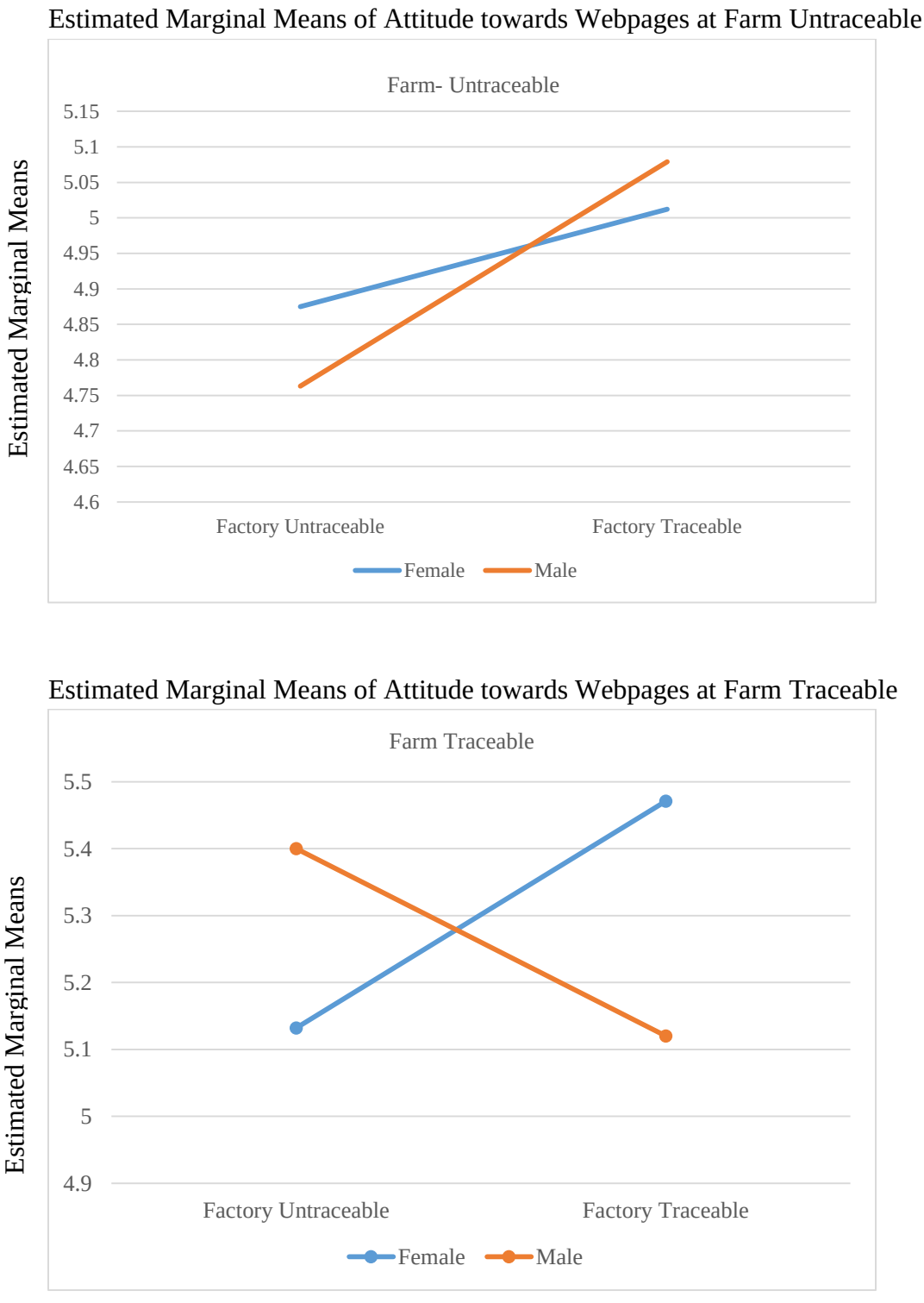
Table 4.5.6. Mean and Standard Error of AaD due to Gender

DV	IV	Levels	Mean	Standard Error
Attitude towards Ad	Farm-Traceability	Traceable	5.281	0.062
		Non-traceable	4.932	0.065
	Factory-Traceability	Traceable	5.171	0.065
		Non-traceable	5.043	0.063
	COM	USA	5.359	0.064
		China	4.855	0.063

Table 4.5.7. Mean and Standard Error of AaD due to Gender interaction

Farm Traceability	Factory Traceability	Gender	Mean	Standard Error
Non-traceable	Non-traceable	Female	4.875	0.144
		Male	4.763	0.108
	Traceable	Female	5.012	0.156
		Male	5.079	0.104
Traceable	Non-traceable	Female	5.132	0.134
		Male	5.4	0.112
	Traceable	Female	5.471	0.143
		Male	5.12	0.108

Figure 4.3. Plot Diagram for Gender Interacting with Farm Traceability and Factory Traceability affecting Attitude towards Webpages



Gender interacted with factory-traceability to create a significant mean difference in attitude towards product [F(1,533)=4.442, *p*=0.036]. When webpages had information about factory-traceability, female participants had higher AaP (mean=5.108) than male participants (mean=4.818). When webpages had no information about factory traceability, interestingly, male participants had higher AaP (mean=5.013) than female participants (mean=4.673). Females' mean AaP when exposed to factory traceable webpages was higher (mean=5.108) than when exposed to non-factory-traceable webpages (mean=4.673). Males' mean AaP when exposed to factory traceable webpages was lower (mean=4.818) than when exposed to non-factory-traceable webpages (mean=5.013).

Similarly, gender interacted with factory traceability and COM as USA, to create a significant mean difference in attitude towards products [F(1,533)=3.508, *p*=0.062]. When webpages had both factory-traceable information and COM as USA, female participants had a higher AaP (mean=5.271) than male participants (mean=5.198). When webpages had no factory traceability and COM as China, female participants had lower AaP (mean=4.217) than male participants (mean=4.901). When webpages had factory as traceable, but COM as China, female participants reported of higher AaP 9mean=4.944) than male participants (mean=4.438). When webpages had factory as non-traceable and COM as USA, female participants did not differ much in their AaP (5.129) than male participants (mean=5.126). Female participants had higher AaP for webpages with factory traceable information and COM as USA (mean=5.271) than for webpages with no factory-traceability and COM as China (mean=4.217). They reported of higher AaP (mean=5.129) for webpages with no-farm-traceability and COM as USA, than for

webpages with farm traceability and COM as China (mean=4.944). Male participants had higher AaP for webpages with factory traceability and COM as USA (mean=5.198) than for webpages with no factory traceability and COM as China (mean=4.217). When webpages had COM as China, male participants' AaP went down (mean=4.438) in presence of factory-traceability, compared to webpages with no-factory-traceability (mean=4.901). The two-way interaction of gender with farm traceability and COM did not have statistically significant differences on AaP. The three-way interaction of gender with farm and factory traceability, farm traceability and COM did not generate statistically significant differences on AaP. The four-way interaction of gender with farm traceability, factory traceability and COM, did not generate statistically significant differences on AaP. Table 4.5.8 presents ANOVA results for mean difference in attitude towards product due to gender. Table 4.5.9, 4.5.10 and 4.5.11 present descriptive statistics (mean and standard deviation) of attitude towards product due to gender's main effect and its interaction.

Table 4.5.8. ANOVA for mean difference in AaP Due to Gender

IV	Sum of Squares	df	Mean-Squares	F-value	Sig.	Partial eta-squared
FarmTrac	0.838	1	0.838	0.299	0.585	0.001
FactTrac	1.785	1	1.785	0.638	0.425	0.001
COM	38.740	1	38.740	13.837	<0.000	0.025
Gender	0.080	1	0.080	0.029	0.866	0.000
FarmTrac x FactTrac	4.298	1	4.298	1.535	0.216	0.003
FarmTrac x COM	0.014	1	0.014	0.005	0.943	0.000
FarmTrac x Gender	0.338	1	0.338	0.121	0.729	0.000
FactTrac x COM	0.020	1	0.020	0.007	0.933	0.000
FactTrac x Gender	12.435	1	12.435	4.442	0.036	0.008
COM x Gender	0.506	1	0.506	0.181	0.671	0.000
FarmTrac x FactTrac x COM	3.533	1	3.533	1.262	0.262	0.002
FarmTrac x FactTrac x Gender	4.610	1	4.610	1.647	0.200	0.003
FarmTrac x COM x Gender	0.593	1	0.593	0.212	0.646	0.000
FactTrac x COM x Gender	9.822	1	9.822	3.508	0.062	0.007
FarmTrac x FactTrac x COM x Gender	1.967	1	1.967	0.703	0.402	0.001

Table 4.5.9. Mean and Standard Error of AaP due to Gender

DV	IV	Levels	Mean	Standard Error
Attittude towards Product	Farm- Traceability	Traceable	4.944	0.104
		Non-traceable	4.862	0.108
	Factory-Traceability	Traceable	4.963	0.107
		Non-traceable	4.843	0.104
	COM	USA	5.181	0.106
		China	4.625	0.105

Table 4.5.10. Mean and Standard Error of AaP due to Gender interaction (2-way)

Factory Traceability	Gender	Mean	Standard. Error
Non-traceable	Female	4.673	0.163
	Male	5.013	0.129
Traceable	Female	5.108	0.175
	Male	4.818	0.125

Table 4.5.11. Mean and Standard Error of AaP due to Gender interaction (3-way)

Factory Traceability	COM	Gender	Mean	Standard. Error
Factory Untraceable	China	Female	4.217	0.235
		Male	4.901	0.179
	US	Female	5.129	0.227
		Male	5.126	0.186
Factory Traceable	China	Female	4.944	0.240
		Male	4.438	0.179
	US	Female	5.271	0.255
		Male	5.198	0.173

Figure 4.4. Plot Diagram for Gender Interacting with Factory Traceability affecting Attitude towards Product

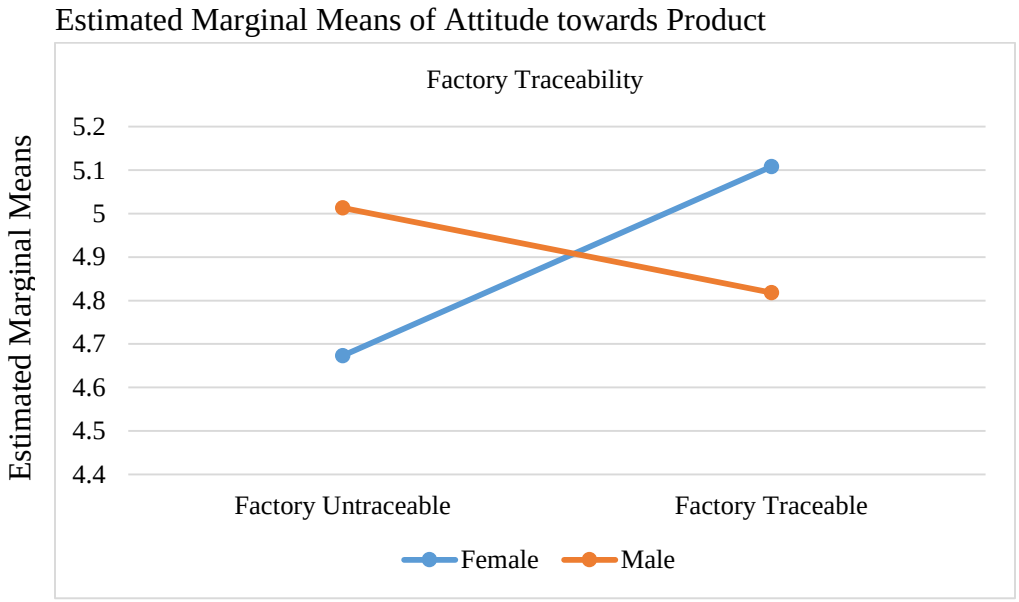
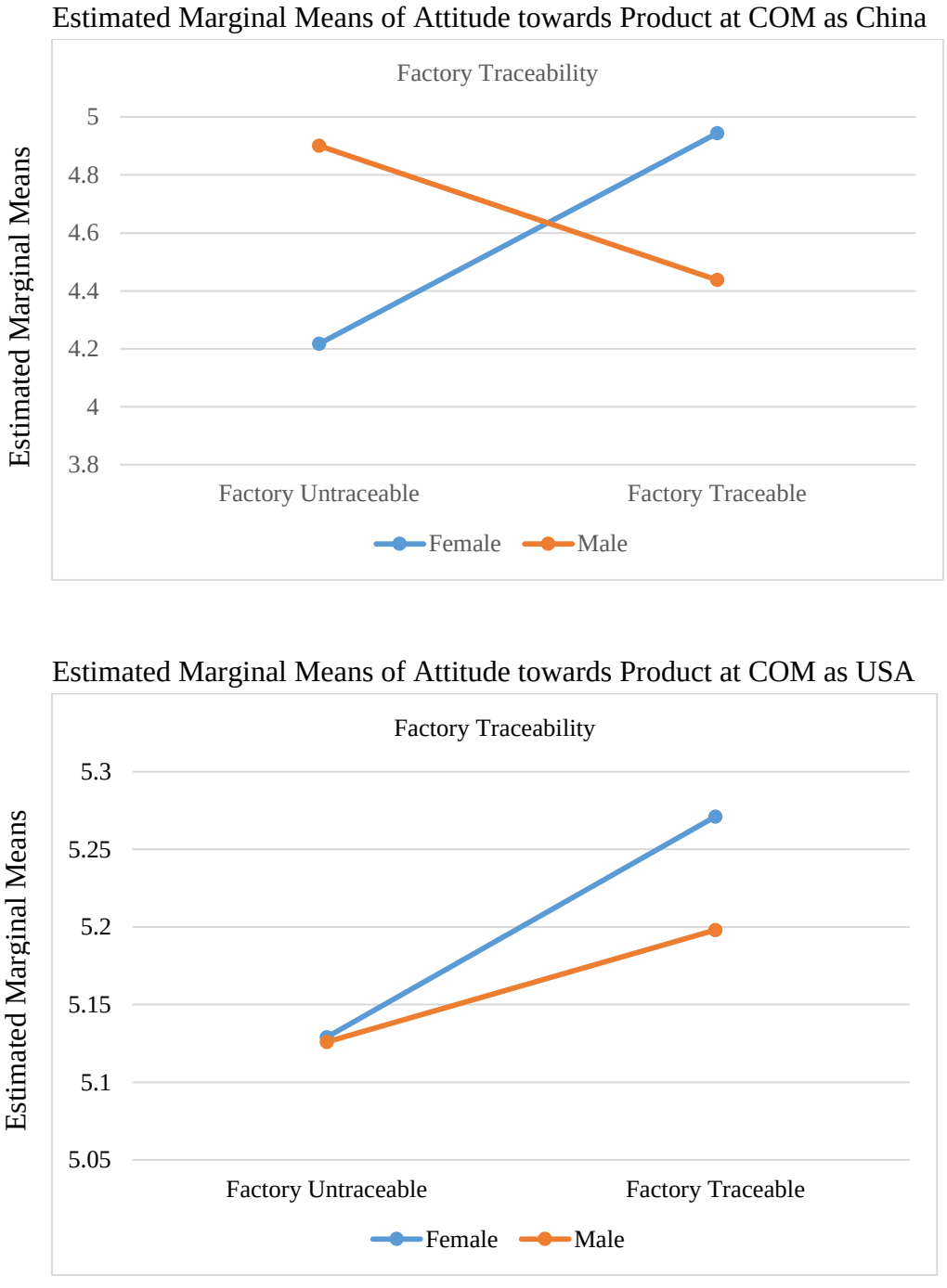


Figure 4.5. Plot Diagram for Gender Interacting with Factory Traceability and COM affecting Attitude towards Product



Gender interacted with factory-traceability to create a significant mean difference in participants' purchase intention [F(1,533)=3.219, *p*=0.073]. When webpages had

information about factory-traceability, female participants had a higher PI (mean= 5.305) than male participants (mean=4.903). When webpages had no information about factory traceability, interestingly, male participants had higher PI (mean=5.023) than female participants (mean=4.995). Females' mean PI when exposed to factory traceable webpages was higher (mean=5.305) than when exposed to non-factory-traceable webpages (mean=4.995). Males' mean PI when exposed to factory traceable webpages was lower (mean=4.903) than when exposed to non-factory-traceable webpages (mean=5.023).

Similarly, gender interacted with both farm and factory traceability to create a significant mean difference in PI [$F(1,533)=4.501$, $p=0.034$]. When webpages had both farm-traceable and factory-traceable information, female participants had a higher PI (mean=5.555) than that of male participants (mean=4.783). When webpages had neither farm-traceability nor factory-traceability, female participants did not have much different PI (mean=4.944) than male participants (mean=4.832). When webpages had farm as traceable, but factory as non-traceable, female participants had lower PI (mean=5.046) than male participants (mean=5.215). When webpages had farm as non-traceable but factory as traceable, female participants did not report much different PI (mean=5.056) than male participants (mean=5.022). Female participants had higher PI for webpages with both farm and factory traceability (mean=5.555) than for webpages with neither farm nor factory traceability (mean=4.944). There was not much difference in their PI for webpages with farm-traceability but no factory traceability (mean=5.046), than for webpages with no farm-traceability but factory-traceability (mean=5.056). Male participants had slightly lower PI for webpages with both farm and factory traceability

(mean=4.783), than for webpages with neither farm nor factory traceability (mean=4.832). They had higher PI (mean=5.215) for webpages with farm-traceability but no factory traceability, than for webpages with no farm-traceability but factory-traceability (mean=5.022).

Gender also interacted with farm traceability and COM as USA to create a significant mean difference in PI [F(1,533)=3.077, *p*=0.080]. When webpages had both farm-traceable information and COM as USA, female participants had a higher PI (mean=5.405) than male participants (mean=5.315). When webpages had no farm-traceable information and COM as China, female participants had a lower PI (mean=4.564) than male participants (mean=4.701). When webpages had farm as traceable and COM as China, female participants had higher PI (mean=5.196) than male participants (mean=4.683). When webpages had farm as non-traceable and COM as USA, female participants had higher PI (mean=5.435) than male participants (mean=5.153). Female participants had higher PI for webpages with farm traceability and COM as USA (mean=5.405) than for webpages with no farm traceability and COM as China (mean=4.564). They had lower PI (mean=5.196) for webpages with farm-traceability and COM as China, than for webpages with no farm-traceability and COM as USA (mean=5.435). Male participants had higher PI for webpages with farm traceability and COM as USA (mean=5.315), than for webpages with no farm traceability and COM as China (mean=4.701). They had lower PI (mean=4.683) for webpages with farm-traceability and COM as China, than for webpages with no farm-traceability and COM as USA (mean=5.153). The two-way interaction of gender with farm traceability, and COM did not have statistically significant differences on PI. The three-way interaction of

gender with factory traceability and COM did not generate statistically significant differences on PI. The four-way interaction of gender with farm traceability, factory traceability and COM, did not generate statistically significant differences on PI. Table 4.5.12 presents ANOVA results for mean difference in purchase intention due to gender. Table 4.5.13, 4.5.14 and 4.5.15 present descriptive statistics (mean and standard deviation) of purchase intention due to gender's main effect and its interaction.

Table 4.5.12. ANOVA for mean difference in PI Due to Gender

IV	Sum of Squares	df	Mean-Squares	F-value	Sig.	Partial eta-squared
FarmTrac	4.350	1	4.350	2.406	0.121	0.004
FactTrac	1.128	1	1.128	0.624	0.430	0.001
COM	36.679	1	36.679	20.291	<0.000	0.037
Gender	4.392	1	4.392	2.430	0.120	0.005
FarmTrac x FactTrac	0.390	1	0.390	0.216	0.642	0.000
FarmTrac x COM	1.820	1	1.820	1.007	0.316	0.002
FarmTrac x Gender	1.634	1	1.634	0.904	0.342	0.002
FactTrac x COM	1.309	1	1.309	0.724	0.395	0.001
FactTrac x Gender	5.818	1	5.818	3.219	0.073	0.006
COM x Gender	0.000	1	0.000	0.000	0.990	0.000
FarmTrac x FactTrac x COM	0.435	1	0.435	0.241	0.624	0.000
FarmTrac x FactTrac x Gender	8.136	1	8.136	4.501	0.034	0.008
FarmTrac x COM x Gender	5.562	1	5.562	3.077	0.080	0.006
FactTrac x COM x Gender	0.024	1	0.024	0.013	0.909	0.000
FarmTrac x FactTrac x COM x Gender	0.009	1	0.009	0.005	0.943	0.000

Table 4.5.13. Mean and Standard Error of PI due to Gender

DV	IV	Levels	Mean	Standard Error
Purchase Intention	Farm-Traceable	Traceable	5.15	0.083
		Non-traceable	4.963	0.087
	Factory-Traceable	Traceable	5.104	0.086
		Non-traceable	5.009	0.084
	COM	USA	5.327	0.085
		China	4.786	0.084

Table 4.5.14: Mean and Standard Error of PI due to Gender interaction (2-way)

Factory Traceability	Gender	Mean	Standard Error
Non-traceable	Female	4.995	0.131
	Male	5.023	0.104
Traceable	Female	5.305	0.141
	Male	4.903	0.100

Table 4.5.15: Mean and Standard Error of PI due to Gender interaction (3-way)

Farm Traceability	Factory Traceability	Gender	Mean	Standard. Error
Non-traceable	Non-traceable	Female	4.944	0.192
		Male	4.832	0.143
	Traceable	Female	5.056	0.207
		Male	5.022	0.139
Traceable	Non-traceable	Female	5.046	0.178
		Male	5.215	0.149
	Traceable	Female	5.555	0.19
		Male	4.783	0.144
Non-traceable	China	Female	4.564	0.201
		Male	4.701	0.141
	USA	Female	5.435	0.199
		Male	5.153	0.141
Traceable	China	Female	5.196	0.18
		Male	4.683	0.147
	USA	Female	5.405	0.189
		Male	5.315	0.147

Thus, we see that male participants reported to have lower means when exposed to webpages with farm-traceability and/or factory-traceability information compared to webpages with no farm and/or factory traceability. Though the mean differences for presence and absence of these information are low, it is interesting to notice that traceable information reduces their ad credibility, AaD, AaP, and PI. However, when gender interacted with COM, males reported higher means when exposed to products with Made in USA information than products with Made in China information.

Summary of Results

Table 4.6 provides a summary of the results. Farm-traceability had a statistically significant effect on attitude towards advertisement, thereby supporting hypothesis 1.b. It did not have significant effect on other dependent variables, thereby rejecting hypotheses H1.a, H1.c, and H1.d. Factory traceability did not have any significant effect on any of the four dependent variables, thereby, rejecting hypothesis H2 (a-d). COM was found to have statistically significant effect on ad credibility, AaD, AaP, and PI, thereby supporting hypothesis 3 (a-d). The interaction of the traceability variables and COM had no statistically significant effect, thereby rejecting H4 (a-d), H5 (a-d), H6 (a-d) and H7 (a-d). However, further investigation revealed the interaction effect of gender moderating with farm traceability, factory traceability, and COM (as USA) on ad credibility, Aad, AaP, and PI.

Figure 4.6. Plot Diagram for Gender Interacting with Factory Traceability affecting Purchase Intention

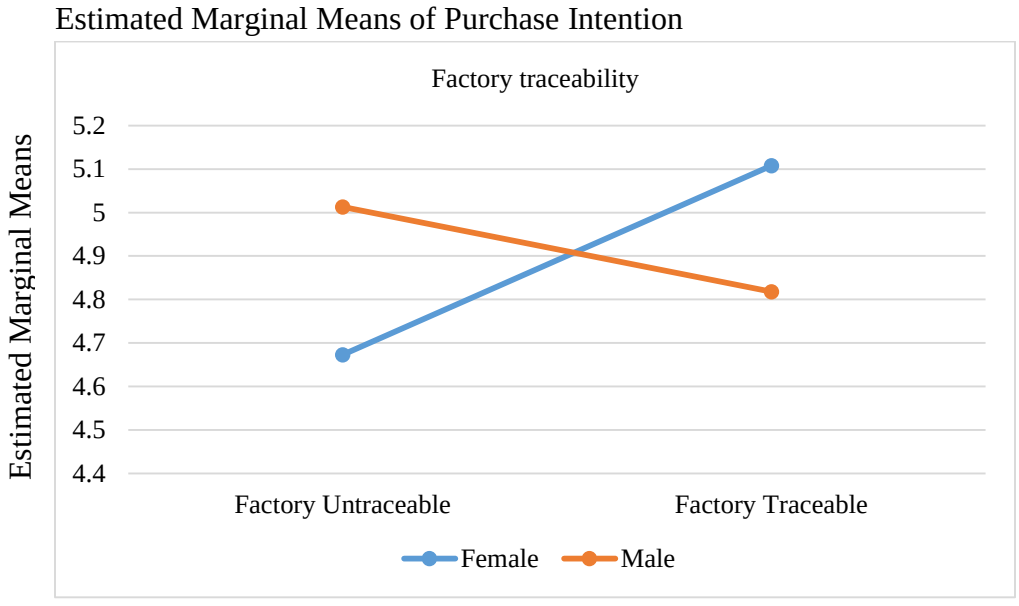
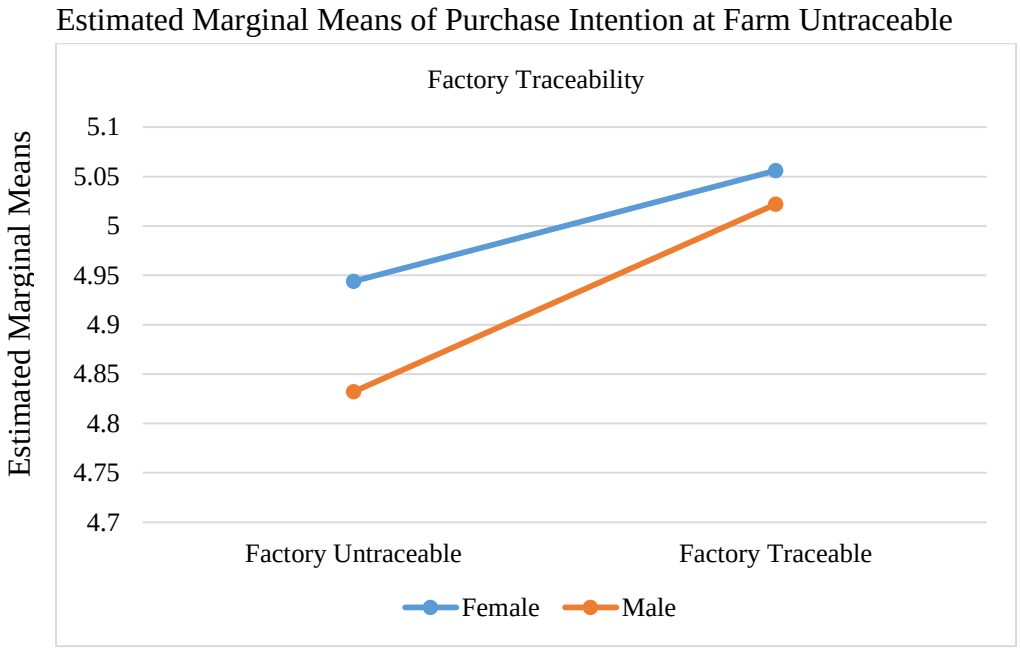


Figure 4.7. Plot Diagram for Gender Interacting with Farm Traceability and Factory Traceability affecting Purchase Intention



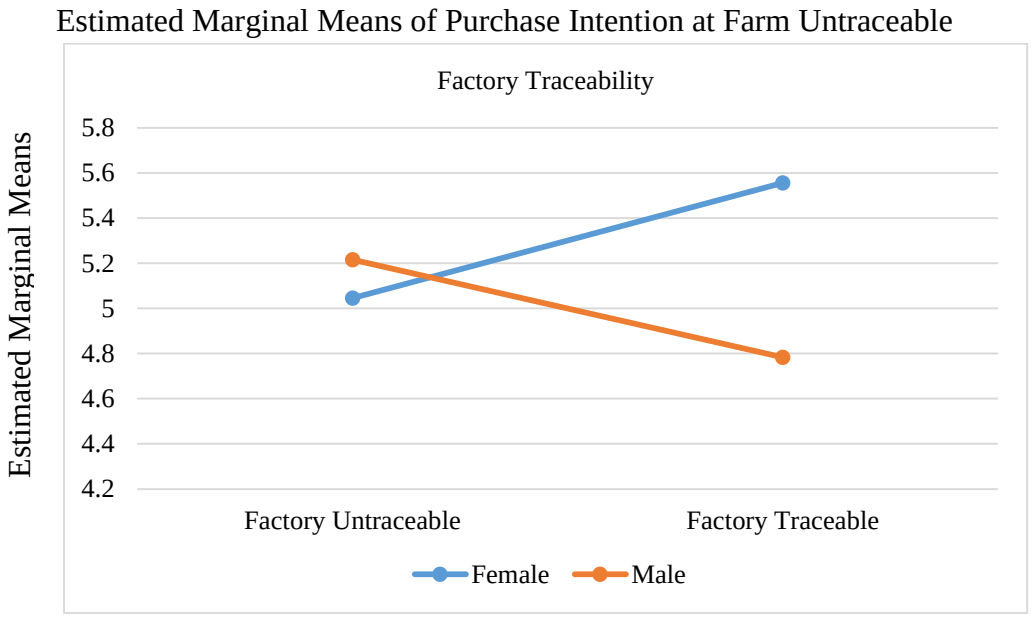
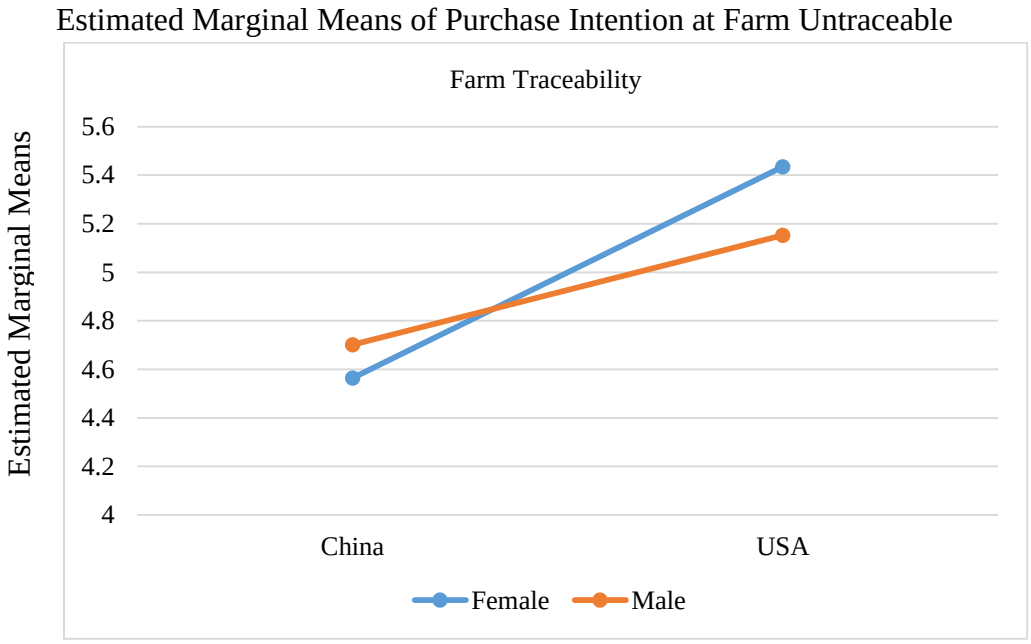


Figure 4.8. Plot Diagram for Gender Interacting with Farm Traceability and COM affecting Purchase Intention



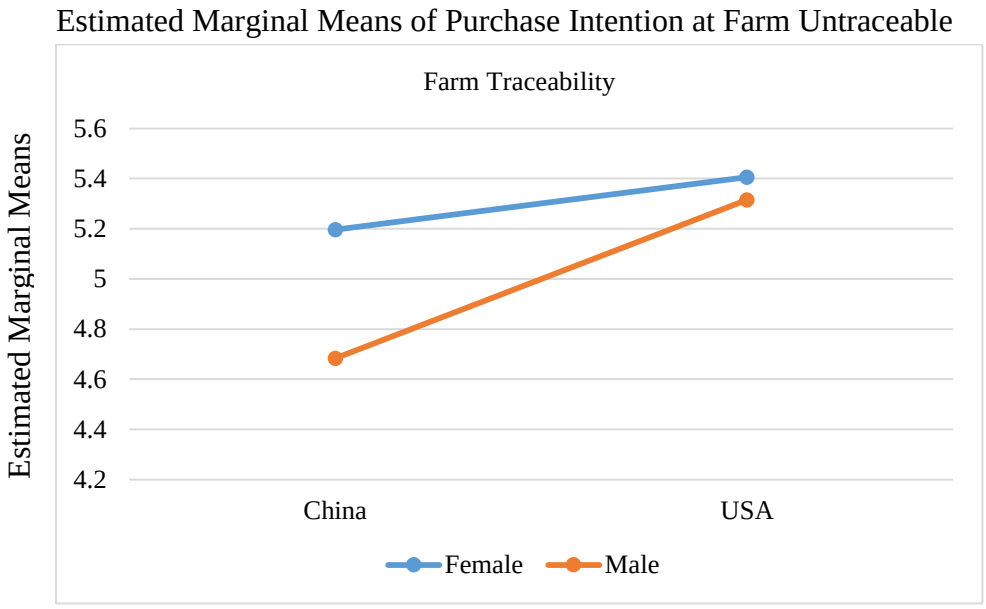


Table 4.6. Summary of Results

Hypothesis	Result
H1: Products with farm-traceability will be more positively related to:	
a) Perceived Ad	Not-supported
b) Attitude towards Ad	Supported
c) Attitude towards Product	Not-supported
d) Purchase Intention	Not-supported
H2: Products with factory-traceability will be more positively related to:	
a) Perceived Ad	Not-supported
b) Attitude towards Ad	Not-supported
c) Attitude towards Product	Not-supported
d) Purchase Intention	Not-supported
H3: Products with USA as their COM will be more positively related to:	
a) Perceived Ad	Supported
b) Attitude towards Ad	Supported
c) Attitude towards Product	Supported
d) Purchase Intention	Supported
H4: Products with farm-traceability and factory-traceability will be more positively related to :	
a) Perceived Ad	Not-supported
b) Attitude towards Ad	Not-supported
c) Attitude towards Product	Not-supported
d) Purchase Intention	Not-supported
H5: Products with farm-traceability and USA as COM will be more positively related to :	
a) Perceived Ad	Not-supported
b) Attitude towards Ad	Not-supported
c) Attitude towards Product	Not-supported
d) Purchase Intention	Not-supported
H6: Products with factory-traceability and USA as COM will be more positively related to :	
a) Perceived Ad	Not-supported
b) Attitude towards Ad	Not-supported
c) Attitude towards Product	Not-supported
d) Purchase Intention	Not-supported
H7: Products with farm-traceability, factory-traceability, and USA as COM will be more positively related to :	
a) Perceived Ad	Not-supported
b) Attitude towards Ad	Not-supported
c) Attitude towards Product	Not-supported
d) Purchase Intention	Not-supported

CHAPTER V: CONCLUSIONS

This chapter includes (a) summary of the study, (b) discussion of the major findings, (c) implications and contributions of findings, and (d) study limitations and future research suggestions.

Summary of the Study

Consumers have shown a preference for having access to product and company information at the point of purchase of an apparel product (Bhaduri et al, 2011). The completeness of a product's information is directly and positively related to consumers' product and brand preferences (Hiscox and Smyth, 2007; Hustvedt & Bernard, 2008; Hustvedt & Bernard, 2010). Thus the availability of traceable information increases assurance about product safety and quality, thereby, building consumer trust and confidence (Clemens, 2003). The literature review suggests that in situations where it's difficult for consumers to judge the value and safety of a product through its appearance alone, traceability guides them through the 'credence factors' which consumers can't experience at the point of sale, thereby, increasing their confidence (Hobbs *et al*., 2005; Golan *et al*., 2002; Moe, 1998; Resende-Filho & Buhr, 2007). The knowledge of manufacturing processes, and their impact on the environment assures consumers about product aspects that might otherwise not be revealed. This study sought to investigate the effect of traceability regarding fiber origin, factory origin, and the country of manufacture, on consumers' attitude towards apparel advertising, ad credibility, attitude towards product, and purchase intentions for apparel.

The study hypothesized the following:

H1: Products with farm-traceability will have higher perceived ad credibility, attitude towards advertisement, attitude towards products, and purchase intention than products with no farm-traceability.

H2: Products with factory-traceability will have higher perceived ad credibility, attitude towards advertisement, attitude towards products, and purchase intention than products with no farm-traceability.

H3: Products with the USA as their COM will have higher perceived ad credibility, attitude towards advertisement, attitude towards products, and purchase intention than products with no farm-traceability.

H4: When products have farm-traceability and factory-traceability, consumers will have higher perceived ad credibility, than when such information is absent.

H5: When products have farm-traceability and USA as COM, consumers will have higher perceived ad credibility, than when such information is absent.

H6: When products have factory-traceability and USA as COM, consumers will have higher perceived ad credibility, than when such information is absent.

H7: When products have farm-traceability, factory-traceability, and USA as COM, consumers will have higher perceived ad credibility, than when such information is absent.

For this study, a 2 (fiber-origin: traceable/non-traceable) x 2 (factory-origin: traceable/non-traceable) x 2 (country of manufacture: USA/China) between subject experimental design was used. Participants were exposed to total of eight combinations of traceability and COM under the between-participants experimental design. Six

hundred and forty participants were recruited for the study through the AMT platform. Eighty-eight responses out of 640 participants were excluded due to missing or bad data. Participants' age range was broadly distributed from 18 or above with the upper limit as 65 and above. Respondents consisted of 199 (36.1%) females and 350 (63.4%) males. Participants consisted of both students and non-students and represented a wide range of ethnic origins.

Discussion of Major Findings

Analysis of variance indicated that female participants experienced a higher attitude towards webpages when exposed to products with farm-traceable information than products with no such information. This result suggests that female participants assessed and evaluated webpages to be positive, helpful, and beneficial when extra details about the cotton farm were provided. As discussed in the literature review, consumers have reported a growing interest in product origin. Thus, this finding supports existing research, where presence of farm details like, farms' locations, their contact farmers, and their experience, made female participants experience a positive increase in their attitude towards webpages. According to hypotheses 1 (a-d), when apparel products have extra details about fiber origin, consumer are expected to have a more positive attitude towards the product, the webpages showing such products, and a higher purchase intention. The study results thus reported of statistically significant effect of farm traceability on attitude towards webpages, thus supporting hypothesis H1 (b). However, the study results did not find any statistically significant effect of farm traceability on ad credibility, attitude towards products or purchase intention to support hypotheses H1 (a, c, and d). This means that when participants were exposed to information about the cotton farm, in the

jean webpage, their attitude towards the jean and/or purchase intention were not significantly higher than when they were exposed to webpages with no cotton farm information. According to the definitions of attitude as used in this study, a higher rating on attitude refers to participants' better perception of the product in regards to any expected benefits. Thus, as the study results reported, participants did not find farm-traceability to be important enough to enhance then attitude towards the product presented with farm information. Participants also did not have any increased intention to buy products in the presence of such information.

Contrary to the hypotheses, factory traceability did not have any significant effect on ad credibility, attitude towards, ad, attitude towards product, or purchase intention. Thus, the presence of extra details about the factory involved in manufacturing the product had no effect on participants with respect to increased expectations, benefits or trust. As seen in the food literature, presence of traceable information about the food supply chain positively impacted consumers' confidence and purchase intention. However, no such increase or difference in their intention was observed in this study when participants were exposed to webpages with extra factory information.

Analysis of variance within this study indicated that country of manufacturing (COM) has a statistically significant effect on ad credibility, attitude, and purchase intention. When female participants saw products as Made in USA, their perceived ad credibility was higher compared to Made in China products. COM may have acted as a signal to female participants that enhanced their trust or otherwise supported their beliefs. As the literature review suggested, respondents might have used this information about COM to estimate their expected benefits from products, to evaluate their qualities and

confirm their purchase intentions. When webpages had USA as the manufacturing country, female participants developed a better attitude towards the website than compared to China as the manufacturing country. It is possible that they could trust the website more, expect greater benefits, and react in more favorable ways. Similarly, they also rated their attitude towards the product to be higher when it was made in USA, as compare to products manufactured in China, indicating that products with USA as their COM were perceived to generate more confidence in participants about the source, quality and impact of a product purchase. Finally the results also reported that female participants had higher intentions of purchasing apparel products if manufactured in the US, as compared to those manufactured in China. These findings support the literature that consumers' purchase intentions for buying apparel products is expected to be influenced by their overall attitude towards such apparel products available with traceable information.

Though hypothesized, the interaction of farm-traceability, factory-traceability, and COM did not create any significant effect on any of the four dependent variables. While participants reported some differences in their attitude, perceived ad credibility, and purchase intention were influenced by farm traceability, factory traceability and COM individually, their responses reported no significant effect due to an interaction between these factors. Presence of farm and factory traceability were expected to present in-depth details about the products' supply chain. Details about the farm origin of the cotton fiber as used in the product, along with the manufacturing factory was expected to shed light on two of the frequently requested pieces of information by some consumers. Presence of farm-traceability along with COM was hypothesized to create a positive

impact due to inclusion of both farm identifiers and the COM. While farm traceability would support farmers, products with the USA as the COM would address peoples' perceptions about better quality and benefits from USA products. However, this hypothesis was not supported. Similarly, the hypothesis about factory-traceability and COM was not supported. The factory information along with country of manufacturing did not generate any difference in participants' opinions. Their attitude, perceived ad credibility, and purchase intention were same for webpages with factory-traceable USA manufactured products, and non-factory-traceable China made products. Finally, ad credibility, attitude towards ad, attitude towards product, and purchase intention were not statistically different in presence of farm-traceability, factory-traceability, and USA as COM, when compared to non-traceable China manufactured apparel products.

The study did not hypothesize any effect for gender with respect to an impact on consumers' behaviors in an apparel purchase scenario. However, on further analysis, gender had a statistically significant effect on the dependent variables while interacting with farm traceability, factory traceability, and country of manufacturing. Female participants reported a higher perceived ad credibility than male participants when they were exposed to factory traceable webpages or USA manufactured products. Furthermore, male participants did not find factory traceable webpages or USA made products important enough, as their perceived ad credibility was reduced in the presence of such information. Similarly, female participants rated the webpages more positive than male participants when the webpages contained information about both farm and factory traceability. Male participants had a more negative attitude towards webpages when they saw traceable information about both farm and factory. That is, they reported negative

attitudes when they saw both farm and factory traceable than when only farm traceable information was present. For attitude towards product, female participants reported a more positive attitude towards the product than male participants when they saw factory traceable webpages and/or USA manufactured products. When females saw the product to also have factory as traceable, they evaluated the product to be better than non-traceable products. For purchase intention, the female participants reported a higher purchase intention than male participants when they saw webpages with factory information. Even when the webpages had both farm and factory traceable, or the farm as traceable and products manufactured in USA, female participants had a higher purchase intention than males. In all the significant interactions, male participants always reported a lower ad credibility, negative attitudes and lower purchase intentions when they saw factory traceable information or saw all types of traceable information present altogether. These gender differences may be due to differences in how males and females process cues or use them as heuristics.

Contributions and Implications

The study findings have several important implications. First, the study explored the concept of traceability applied to the textile and apparel industry, thus filling a gap in literature. Traceability had been found to reinforce consumers' trust and confidence for products, brands, and webpages, in the food industry. When information about where the raw-materials came from, where the product had been manufactured, and who had been involved with the product were present, consumers' confidence about products' genuineness was increased. Though clothing consumption can be similar to food consumption as a basic human need, clothing consumption differs from food in the sense

that it does not get exhausted with a single use, can be stored, and can be consumed again and again. It is different in that it is not ingested when consumed. Traceability has been widely used in food industry, but is a fairly innovative concept applied in the textile and apparel industry. Only a few companies are taking the initiative to offer product information beyond legal mandates. In the global dynamic business environment, where most of the products are hybrid in nature, inclusion of such information might be an option for apparel firms to better advertise their products. This might help firms to specially cater to consumers with preferences for products of specific origin, specific manufacturing country, or further details.

Second, the study findings strongly supported the previous literature of the importance of COM for textile and apparel consumers. People perceive US manufactured apparel products as a signal of high product qualities. The literature showed that consumers use information about the manufacturing country to estimate benefits from products, and to evaluate their qualities and confirm their purchase behavior. The findings indicated similar results where female consumers had higher perceived ad credibility, higher scores on attitude towards ad and product, and a higher purchase intention rating for USA manufactured products than Chinese products. Thus businesses manufacturing their apparel products in the U.S. can advertise this information not just as a legal requirement, but as a value-addition claim. It also supports the potential of the 'reshoring' movement by the U.S. government in bringing manufacturing back to the U.S. Also, businesses considering reshoring back to the US might tap into a potential market.

Third, the findings of the study suggest that farm traceability positively affects female consumers' attitude towards advertisement. Based on the results of this study, when female consumers have some evidence about where the fiber or raw-material of the apparel product is sourced from, they estimate such products to be better compared to products with no farm information. Considering that the presence of farm information positively affects female consumers' predisposition about webpages showing such products and based on this study, apparel companies might use such information in their product advertisements to enhance female consumer attitudes. Businesses willing to advertise traceable information might consider including the origin of cotton fibers to increase their sales and to come across as genuine. This will be helpful to support US cotton farmers as well. Hence advertising farm-traceable information might be helpful for both female consumers and US cotton farmers.

Though hypothesized, factory traceability did not generate any difference in consumers' perceived ad credibility, attitude towards advertisement, attitude towards products, or their purchase intention. However certain times, presence of factory information significantly lowered male participants' behaviors when compared to their behavior in absence of such information. Considering that factory-traceable information also presented the manufacturing country, people might have ignored other unique details, and did not find them effective. Thus this non-significant finding suggests that apparel firms might not benefit from presenting factory related details on their webpages. They might not invest their resources to include information such as presence of factory address, the contact person, or similar details.

Fourth, consumers' perceived importance of farm traceability and COM (USA) in this study might imply the potential business value of such information. This study revealed consumers' preference for farm traceability over no information, preference for USA manufactured products over Chinese products. Learning consumers' specific expectations, and adding such information to company webpages might be helpful for businesses to create a niche in the competitive apparel industry. In the era of mass production, where individual products are all similar and have minimal product differentiation, including such information about products on webpages, might help firms develop an extra edge and serve their customers better. Also, firms which are currently specializing in products made from US cotton, and seeking to be transparent, might want to include such information to tap into a potential market.

Fifth, the study also revealed some interesting findings about how gender played a moderating role on the relation between traceable information, to generate a difference in advertisement and product attitude, perceived ad credibility, and higher purchase intention. When exposed to apparel webpages having information about cotton farm and the manufacturing factory, female consumers reported to have increased ad credibility, higher attitudes towards advertisements, and increased purchase intention than males, than webpages with no farm and factory information. This suggests female consumers consider webpages with such information to be more believable, expect them to have more benefits, to be more meaningful, and hence, increased purchase intentions. Apparel firms specializing in products for female consumers might want to include farm and factory information in their webpages, to tap such potential clientele. Results of this study also showed that females, when exposed to presence of factory traceable signals, had

increased purchase intentions than males further indicating that firms specializing in female apparel products might consider publishing factory traceability on their webpages. Though female consumers had higher purchase intention for products having both farm and factory traceability than just factory traceability, it might not be always possible for businesses to invest all their resources to be traceable in both ways. Thus, to find a balanced choice in between economic profitability and being traceable, firms need to identify consumer preferences on types of traceability.

Limitations and Scope of Future Research

While the study has significant contributions, it has certain limitations as well. First, the study was conducted as a controlled experimental design. Many important intrinsic and extrinsic variables like price, style, and quality have been found to be major factors considered by consumers while making a product purchase. Thus, the effect of all such variables had to be controlled by keeping them constant. However, in actual apparel purchase scenarios, such variables cannot be controlled and always have vital roles in consumers' choices. Since including all such variables was beyond the scope of this study, further research considering these variables along with traceability might be helpful to better replicate real apparel purchase scenarios.

Second, the study only focused on e-commerce and online company webpages. Future study about the presence of similar traceable information in packaging and labelling of actual apparel products might be interesting to investigate.

Third, males in this study reported reduced ad credibility, attitude towards ad, attitude towards products, and purchase intentions than females, when exposed to factory traceable webpages. Therefore, further study could be conducted to specifically examine

the effect of factory traceability, and the depth and level of traceability in building overall confidence and trust in males for apparel products. Also further research in depth about the positive impact of traceability in female consumers can also be helpful in terms about the type of products, and their preference of different types of traceability.

Fourth, the study was based on a specific apparel product, a pair of jeans, and considered USA and China as countries of manufacturing. Future study involving other apparel products, and other manufacturing countries might be interesting to check for the impact of traceability and COM on consumers.

Fifth, the study includes basic information about farm traceability through farm's county and state, contact details of the farmer, and number of years in farming, and acres of farming land. For traceability to factory-origin, the dimensions included were the manufacturing factory's unique identification name, contact details, address, and years in business. However, future research about the depth and width of traceability, in terms of what extent and which type of traceable information have a greater impact on consumers might be interesting to study.

Finally, the study focused on purchase intention and could not study the actual purchase behavior. Since it was beyond the scope of this research to explore the relation between traceability and purchase behavior, a future study might be helpful to reassure the relationship between traceability, and attitude, purchase intention and purchase behavior.

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APPENDIX A
SURVEY INSTRUMENTS

RECRUITMENT SCRIPT

The primary goal of this research is to investigate your attitude towards clothing and apparel purchase. A screenshot of an apparel website will be shown to you. Your participation will help today's apparel brands with better understanding of consumer expectations. Participation in this study is totally voluntary. You need to be 18 years of age or above, and will be compensated at $1.00 for completing the entire survey.

TRACEABILITY TO FARM & FACTORY, COUNTRY OF MANUFACTURING, AND
APPAREL PURCHASE INTENTION
Primary-Investigator: Saheli Goswami

CONSENT FORM

Description and Explanation of Procedures:

The primary goal of this research is to investigate your attitude towards clothing purchases. A screenshot of an apparel webpage will be shown to you, and you will be asked for feedback. Your participation will help today's apparel brands to develop a better understanding of consumer expectations.

Participation in this study is totally voluntary.

Confidentiality:

Data for the survey will be saved anonymously and kept strictly confidential. Electronic files will be saved with numeric codes with no personal identifiers. Throughout the survey, if you feel uncomfortable with any question, you may stop participation any time.

Risks and Benefits:

There are no physical or psychological risks in participating in this study. The study results will benefit society as we will have a better understanding of consumers' attitudes and expectations about apparel brands.

Compensation:

On completion on the entire study, your contact information will be eligible for winning one of two $20 Target gift cards.

Consent:

_____ By checking this box, you confirm your age as 18 years or above, and your consent to participate in this study.

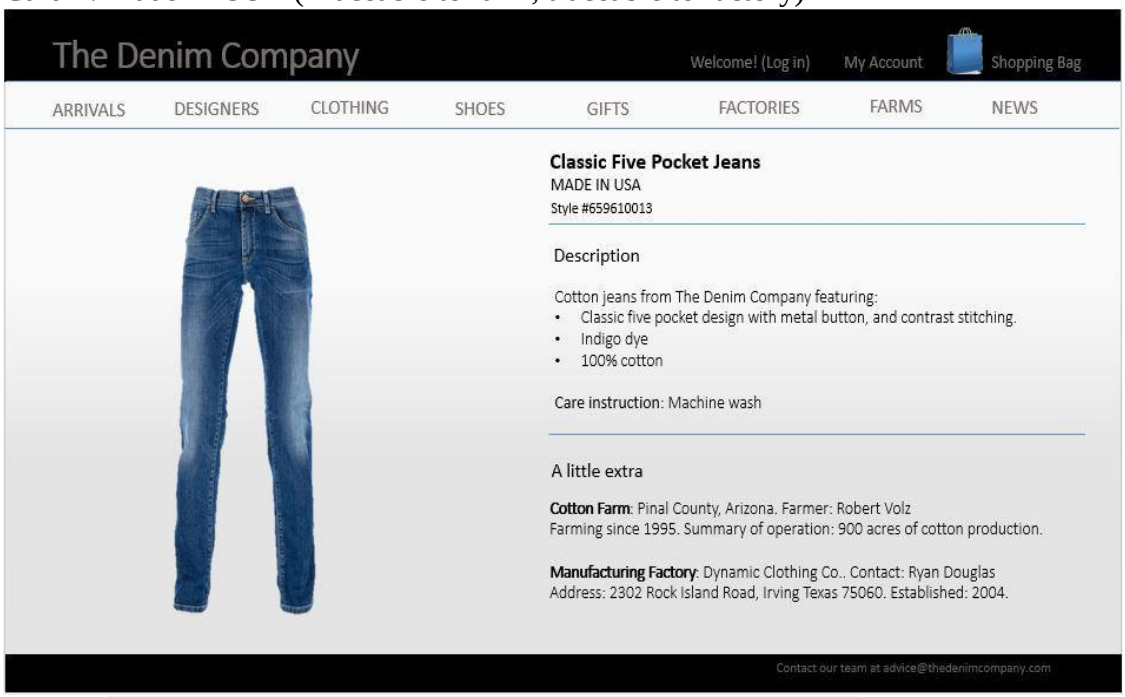
Have you purchased a pair of denim jeans in past year or do you intend to purchase a pair in the near future?

- ❍ Yes (1)
- ❍ No (2)

In this study you will see an image of a webpage for denim jeans and you will be asked to answer a few questions about the webpage. Please read the page carefully before answering the questions.

SURVEY

Card 1: Made In USA (Traceable to farm, traceable to factory)



This image was managed to control the time a participant spends on this page.

[There were a total of 8 stimuli. Participants were exposed to only one stimuli in random order]

Based on what you just read about the denim jeans, please answer the following questions.

I consider the WEBPAGE to be :

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)
Very Bad:Very Good (1)	❍	❍	❍	❍	❍	❍	❍
Unfavorable:Favorable (2)	❍	❍	❍	❍	❍	❍	❍
Unpleasant:Pleasant (3)	❍	❍	❍	❍	❍	❍	❍
Unlikeable:Likeable (4)	❍	❍	❍	❍	❍	❍	❍
Unbelievable:Believable (5)	❍	❍	❍	❍	❍	❍	❍
Untruthful:Truthful (6)	❍	❍	❍	❍	❍	❍	❍
Unrealistic:Realistic (7)	❍	❍	❍	❍	❍	❍	❍

Q3.4 I consider the JEANS to be :

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)
Very Bad:Very Good (1)	❍	❍	❍	❍	❍	❍	❍
Unfavorable:Favorable (2)	❍	❍	❍	❍	❍	❍	❍
Unpleasant:Pleasant (3)	❍	❍	❍	❍	❍	❍	❍
Unlikeable:Likeable (4)	❍	❍	❍	❍	❍	❍	❍

For this study, we want to make sure our respondents are paying attention as they answer our questions. Please type or paste the word 'survey' in the text box below.

If the jeans were priced at a price you were willing to pay, would you purchase clothing from The Denim Company?

- ❍ Definitely Not (1)
- ❍ (2)
- ❍ (3)
- ❍ (4)
- ❍ (5)
- ❍ (6)
- ❍ Definitely (7)

If the jeans were priced at a price you were willing to pay, would you tell a friend about The Denim Company?

- ❍ Definitely Not (1)
- ❍ (2)
- ❍ (3)
- ❍ (4)
- ❍ (5)
- ❍ (6)
- ❍ Definitely (7)

If clothing products with farm and factory information are available in stores, I would tend to buy them.

- ❍ Definitely Not (1)
- ❍ (2)
- ❍ (3)
- ❍ (4)
- ❍ (5)
- ❍ (6)
- ❍ Definitely (7)

We would like you to answer the following demographic questions. These will help us to understand your answers better.

What is your age in years?

- ❍ 18-20 (1)
- ❍ 22-34 (2)
- ❍ 35-44 (3)
- ❍ 45-54 (4)
- ❍ 55-64 (5)
- ❍ 65 and Over (6)

What is your gender?

- ❍ Male (1)
- ❍ Female (2)
- ❍ Prefer not to disclose (3)

What is your race/ethnicity?

- ❍ Caucasian, non-Hispanic (1)
- ❍ African-American (2)
- ❍ Hispanic (3)
- ❍ Asian (4)
- ❍ Other (5)

What is your marital status?

- ❍ Currently Married (1)
- ❍ Currently Unmarried (2)

What is the highest level of education you have completed?

- ❍ Less than high-school (1)
- ❍ High-school (2)
- ❍ College (3)
- ❍ Graduate school (4)

Occupation

- Student (1)
- Part-time employed (2)
- Full-time employed (3)
- Retired (4)
- Not employed (5)

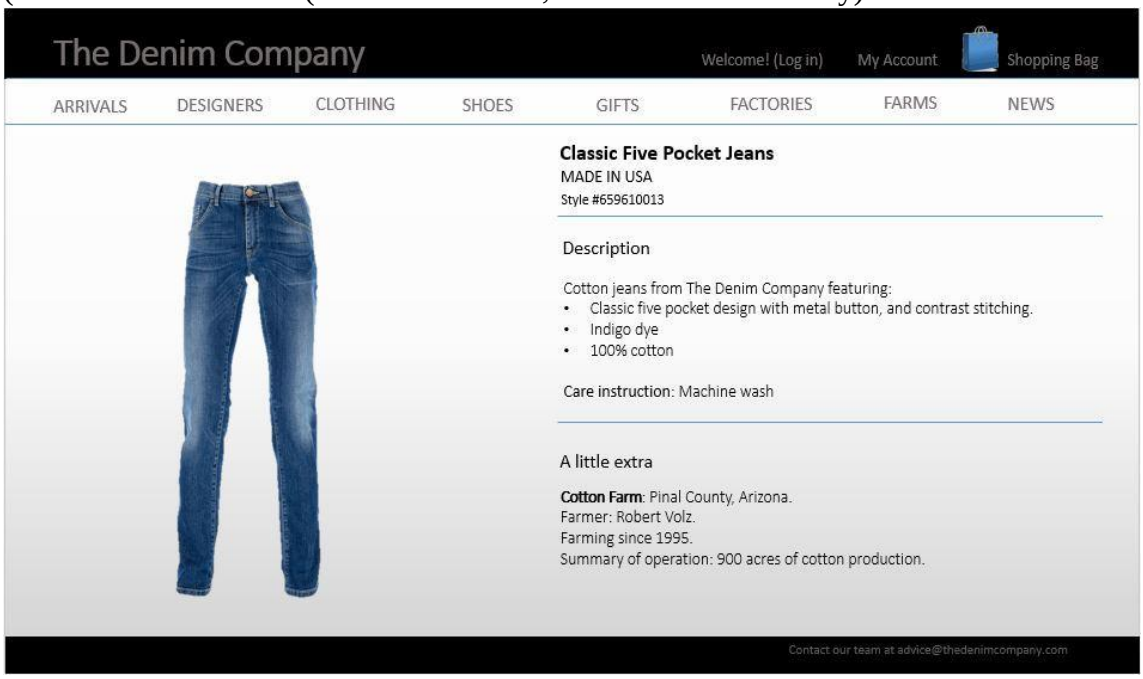
Annual household income:

- Less than $ 10,000 (1)
- $10,000 - $29,999 (2)
- $30,000 - $49,999 (3)
- $50,000 - $69,999 (4)
- $70,000 - $89,999 (5)
- $90,000 - $149,999 (6)
- $150,000 or above (7)

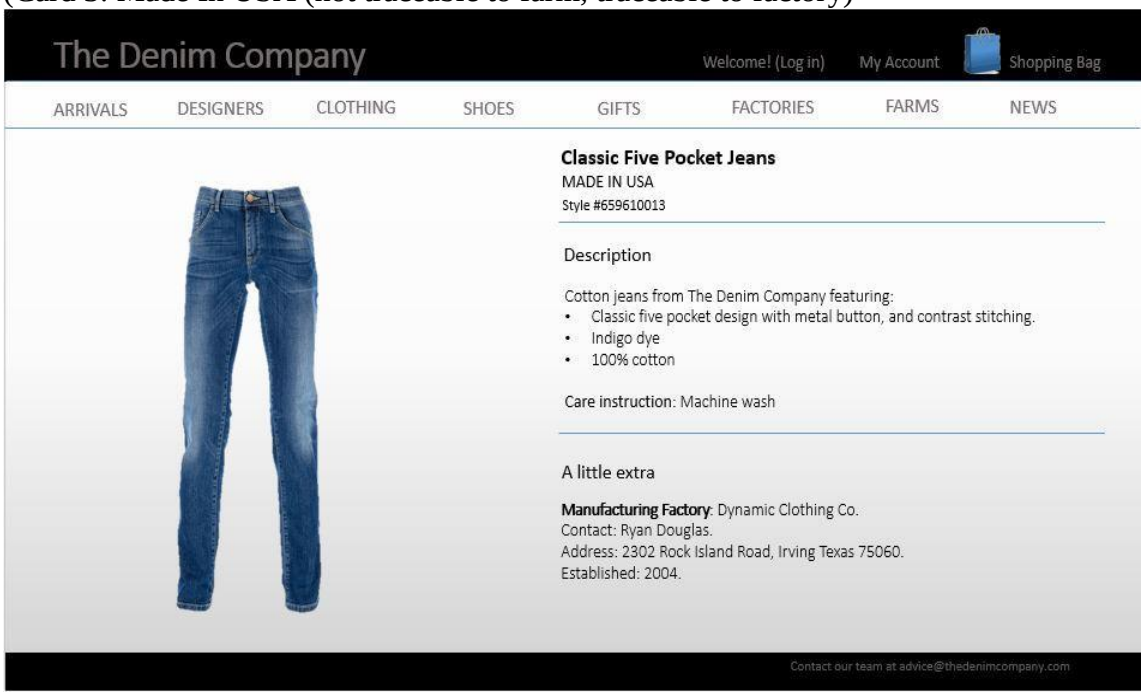
Thank you for taking part in this study. Your validation code for mTurk is ${e://Field/mTurkCode} PLEASE PRESS ON THE CONTINUE BUTTON ONE MORE TIME TO RECORD RESPONSES.

STIMULI

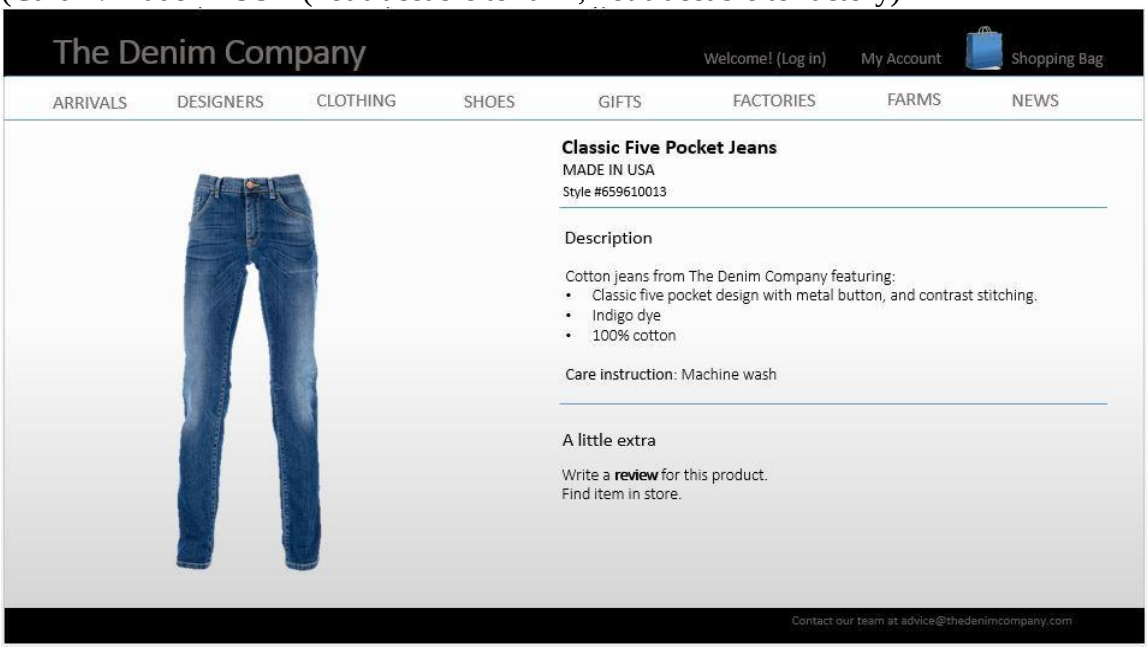
(Card 2: Made In USA (Traceable to farm, not traceable to factory)



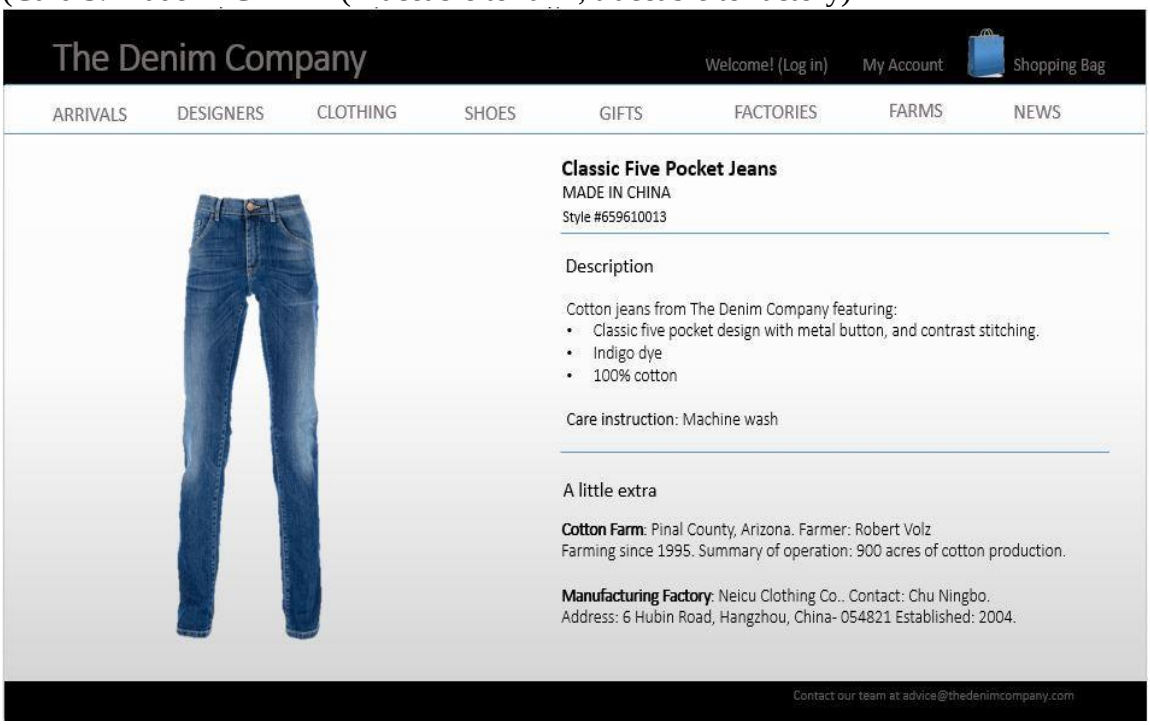
(Card 3: Made In USA (not traceable to farm, traceable to factory)



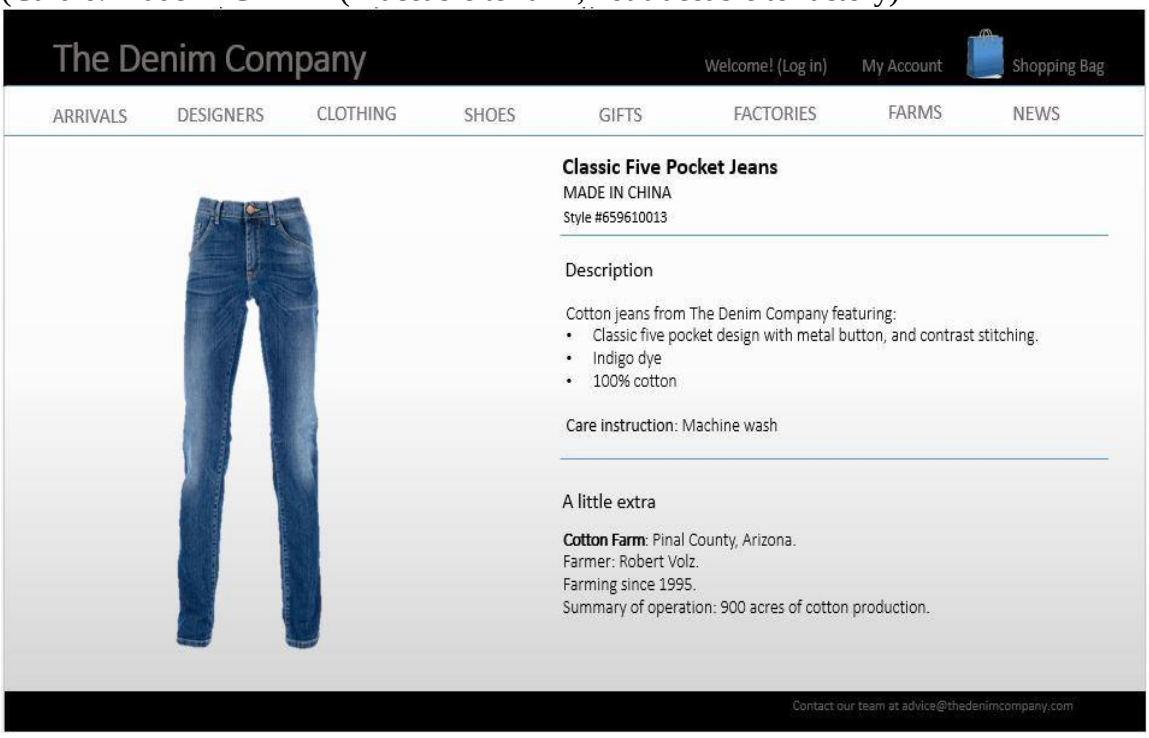
(Card 4: Made In USA (not traceable to farm, not traceable to factory)



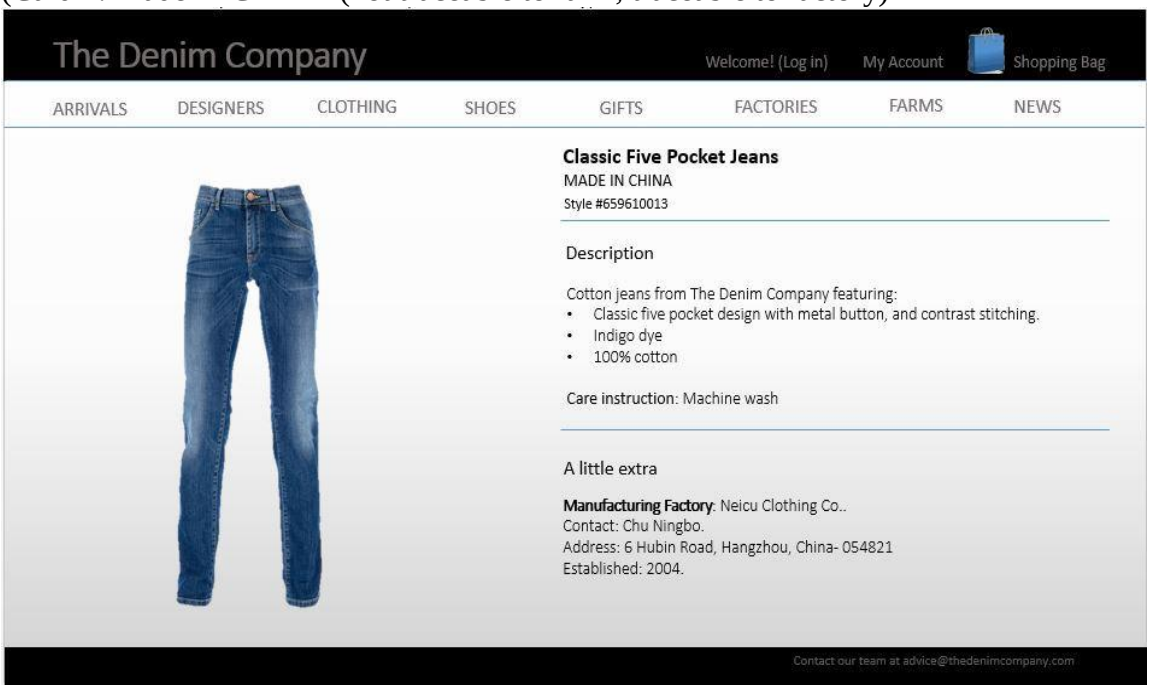
(Card 5: Made In CHINA (Traceable to farm, traceable to factory)



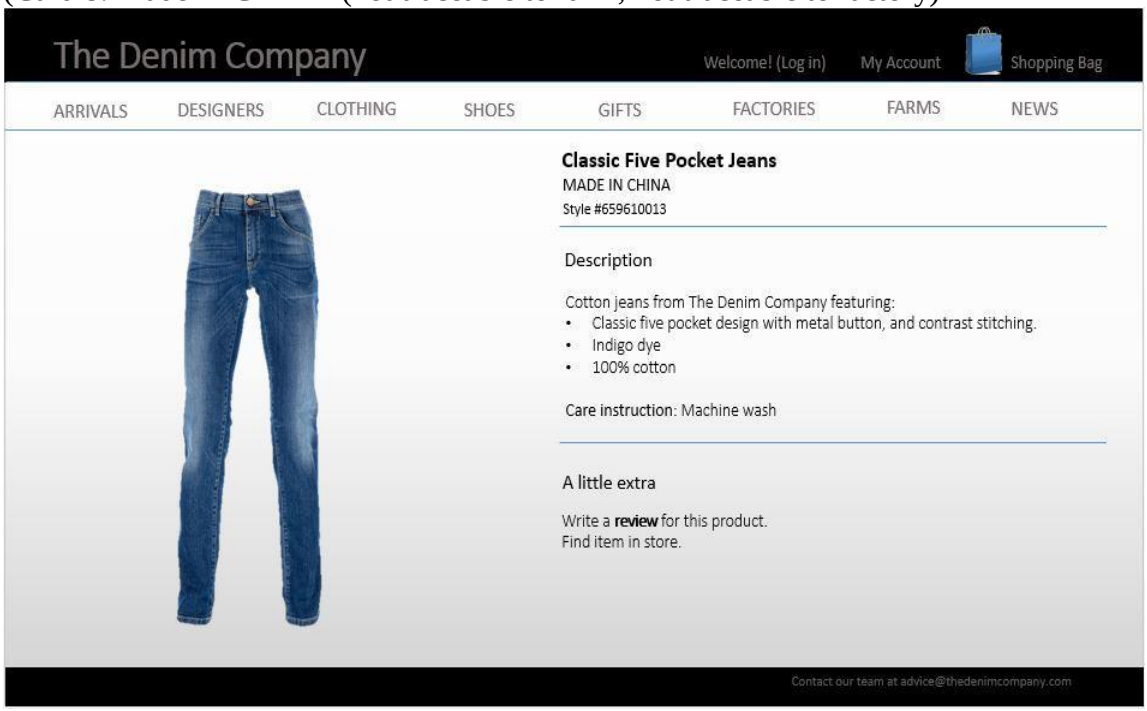
(Card 6: Made In CHINA (Traceable to farm, not traceable to factory)



(Card 7: Made In CHINA (not traceable to farm, traceable to factory)



(Card 8: Made In CHINA (not traceable to farm, not traceable to factory)



APPENDIX B

INSTITUTIONAL REVIEW BOARD DOCUMENTS

Campus Institutional Review Board
University of Missouri-Columbia

485 McReynolds Hall
Columbia, MO 65211-1150
PHONE: (573) 882-9585
FAX: (573) 884-0663

March 3, 2014

Principal Investigator: Goswami, Saheli
Department: Textile and Apparel Mgmt

Your Application to project entitled *TRACEABILITY TO FARM & FACTORY,COUNTRY OF MANUFACTURING,AND APPAREL PURCHASE INTENTION* was reviewed and approved by the MU Campus Institutional Review Board according to terms and conditions described below:

IRB Project Number	1211017
Funding Source	University of Missouri - Columbia
Initial Application Approval Date	March 3, 2014
IRB Expiration Date	March 3, 2015
Level of Review	Exempt
Project Status	Active - Open to Enrollment
Regulation	45 CFR 46.101b(2)
Risk Level	Minimal Risk

The principal investigator (PI) is responsible for all aspects and conduct of this study. The PI must comply with the following conditions of the approval:

1. No subjects may be involved in any study procedure prior to the IRB approval date or after the expiration date.
2. All unanticipated problems, serious adverse events, and deviations must be reported to the IRB within 5 days.
3. All modifications must be IRB approved by submitting the Exempt Amendment prior to implementation unless they are intended to reduce risk.
4. All recruitment materials and methods must be approved by the IRB prior to being used.
5. The Annual Exempt Form must be submitted to the IRB for review and approval at least 30 days prior to the project expiration date.
6. Maintain all research records for a period of seven years from the project completion date.
7. Utilize the IRB stamped document informing subjects of the research and other approved research documents located within the document storage section of eIRB.

If you have any questions, please contact the Campus IRB at 573-882-9585 or umcresearchcirb@missouri.edu.

Thank you,

Charles Borduin, PhD
Campus IRB Chair