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The Certification of Authenticity

Effects on product perception

Richard Granville Starr, Jr.

A thesis submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy in Marketing, The University of Auckland, 2011.
Abstract

Authenticity is a concept of increasing importance in a postmodern world. A review of key literature reveals that authenticity is a difficult to define multidimensional construct. In the marketing context, authenticity can be defined as an assessment of the genuineness of a product or experience made by an evaluator in a particular context (Grayson and Martinec 2004). As such, it represents the interaction of an object, place, and person. However, authenticity has strong credence attributes: it is often difficult or impossible to demonstrate physical properties which indicate authenticity. Consequently, certification—the process of adding credible, salient, and visible information to frame customer perceptions of authenticity—may be a critical cue for evaluations.

This research assessed the effects of certification of authenticity on product perceptions. The research context examined the effectiveness of multiple certification marks on the perceived authenticity of a Maori greenstone (pounamu) carving, an indigenous art form well-known in New Zealand. Study 1 used a traditional fishhook-style carving as a stimulus in a 2 (age: old, new) x 4 (certification: toi iho™, New Zealand Made, Made with Care, no certification) full factorial design. Study 2 used a less-traditional silver fern carving design in a 2 (Age: old, new) x 3 (certification: toi iho™, New Zealand Made, no certification) x 2 (social identity primed and unprimed) full factorial design. Multiple dependent variables were measured on interval scales, including the perceived level of authenticity, liking, quality, perceived value, and purchase intent.

Most prior work on authenticity considers the context-specific antecedents of authenticity, which are generally inherent attributes of the product of category under study. This research took a broader approach, with the aim of greater generalisability. Four general antecedents of authenticity were modelled. Two object related factors, perceived age of the object and certification, were included. Two individual factors were also considered, social identity and perceived expertise with the category.

A series of 11 hypotheses was tested, predominantly using ordinary least squares regression. The four proposed general antecedents were regressed on authenticity, and social identity, object age, and certification were found to have significant direct effects on
authenticity. It was also found that priming social identity had a significant effect on perceptions of authenticity of an object which is consistent with the respondent’s social identity. Perceived expertise with the product category had a significant effect when entered as the last regressor in a parsimonious model, but dropped to insignificance when included in larger models.

Authenticity was treated as a mediator between the antecedents and a range of outcome variables including liking, perceived quality, perceived value, and purchase intent. Findings confirm that authenticity partially mediates the effect of the antecedents on the outcome variables. Authenticity had a strong direct effect on the outcome variables (liking, perceived quality, perceived value, and purchase intent), and this direct effect exceeded the direct effects of the antecedents (social identity, product age, category expertise, and certification) on the outcome variables. Three potential interaction effects were tested: social identity x certification, perceived object age x certification, and category expertise x certification. The effects of age x certification were significant for toi iho™ certification only, and category expertise x certification was significant for the New Zealand Made certification only. The effects of social identity x certification were not significant.

Prior research in many fields has found that authenticity is an important, even central, concept in how people perceive their own identities. A range of work also indicates that individuals often seek personal authenticity through specialised types of consumption. Overall, this study found that perceived authenticity is an important precursor to product perceptions, and it is linked with greater liking, value perceptions, quality perceptions and likelihood to purchase. Certification was also found to significantly strengthen perceptions of product authenticity.

Putting these elements together, it is clear that perceptions of product authenticity can be increased through adding, manipulating, or communicating the antecedents of age and certification. Perceived authenticity can also be affected by priming perceptions of social identity. Greater perceived authenticity leads, in turn, to more positive affect towards the product. This should result in positive commercial outcomes such as greater purchase, loyalty, or market share. Given the philosophical centrality of the authenticity concept to individual self-perception, it is only a short leap to suggest that more authentic products potentially have a strong psychological resonance with consumers.
Dedication

Nancy: thank you.
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Chapter 1. Overview

Authenticity is a concept of increasing importance to marketing. The roots of the construct are found in existential philosophy. From that base, authenticity has become important in psychoanalysis, semiotics, aesthetics, music, tourism, and the marketing and branding literatures. However, the research around authenticity is contentious, and Beverland and Farrelly (2010) describe the nature of authenticity in consumption as contested. Some authors argue that authenticity is of increasing importance in a less traditional postmodern world, while postmodernists themselves sometimes view the concept as spurious or irrelevant. Reisinger and Steiner (2005) argue that authenticity is not even a basic concept as defined by Thomas Kuhn, because researchers have neither a singular nor finally accepted idea of what it means. But this lack of agreement has, nonetheless, spurred a greater level of research into authenticity.

1.1. Definitions

Although there is vigorous debate in the authenticity literatures, there is general agreement that authenticity is a difficult to define multidimensional construct with many context-specific aspects. Authenticity can be viewed as an assessment of a product or experience made by an evaluator in a particular context (Grayson and Martinec 2004). As such, it represents the interaction of an object, place, and person. Although it seems that authenticity should be an inherent property of an object, it is often difficult or impossible to demonstrate physical properties which indicate authenticity. Under these circumstances, the issue of certification of authenticity becomes important.
Certification is a process of adding extrinsic information to frame customer perceptions of a product or service. Certification of authenticity is a process of adding cues to indicate the genuineness of a particular product or service. The effectiveness of certification can vary substantially, driven by its visibility, credibility, salience, and other factors. Based on information provided in the certification, customers might judge a product to be authentic because it comes from a particular manufacturer (e.g., Intel Inside), country (Kiwi Made), region (Champagne), is of a certain quality (Grade A), or possesses certain properties (BioGro certified organic foods). In most cases, these judgments of authenticity would be difficult or impossible without visible certification.

1.2. Research objectives

As Chapter Three will substantiate, certification has often been used by marketers throughout the ages (Geary 1986) to influence perceptions of authenticity in different contexts (goods, services, experiences, and people). For example, Revilla and Dodd (2003) found that perceptions of authenticity are positively influenced by the presence of certification. Despite this finding, the certification of authenticity does not appear to have been examined either theoretically or empirically. Consequently, the overarching purpose of this thesis is to evaluate the influence of certification on perceptions of product authenticity. However, as will be explained in Chapter 2, a measure of authenticity is needed before this can be accomplished. Therefore, the first specific objective of this research is to develop and validate a measurement scale which is not context-dependent, and acknowledges that authenticity is not simply dichotomous (i.e. absent or present).

Subsequently, this research will take advantage of the newly-developed scale to achieve the second and third research objectives. This second research objective is to experimentally compare the relative influence of two non-mutually exclusive forms of certification (country of origin certification and ethnic certification) on perceptions of product authenticity. Finally, the third objective of this research is to experimentally examine one of the possible boundary conditions of certification effectiveness. To do so, this research will experimentally examine the interaction
between certification and the product attribute of perceived age. Perceived age was selected because, as the review of the literature on authenticity detailed in Chapter 2 will reveal, object-related attributes are clearly associated with authenticity (Beverland (2005). Perceived age, in particular, is a potential antecedent of authenticity which may be applicable in multiple contexts.

1.3. Overview of the research

This research considered the nature of authenticity, the process of certification, and the effects of certification of authenticity on product perceptions. Exploratory research assessed the way in which the term authenticity is used in commercial contexts, as background to assist in the development of valid scales. Study 1 used a traditional fishhook-style carving as a stimulus in a 2 (age: old, new) x 4 (certification: toi iho™, New Zealand Made, Made with Care, no certification) full factorial design. Study 2 used a less-traditional silver fern carving design in a 2 (Age: old, new) x 3 (certification: toi iho™, New Zealand Made, no certification) x 2 (social identity primed and unprimed) full factorial design. Multiple dependent variables were measured on interval scales, including a perceived level of authenticity, liking, quality, and purchase intent. Ordinary least squares regression analysis was used to assess main and interaction effects.

The stimulus used for this research is a New Zealand Maori carving made of pounamu, the Maori term for several types of nephrite jade which are also known as greenstone. These carvings are commonly worn in New Zealand, and marketed to Maori, pakeha (New Zealanders of European extraction), and tourists. Pounamu has a rich and complex mix of cultural symbolism for Maori, which is typically understood to a lesser degree by other groups. A brief overview of Maori perspectives on pounamu and authenticity, including exploratory research from an etic point of view, is reflected in section 4.5. The main research studies were conducted from a broad perspective, using a sample of respondents including New Zealand Europeans, Maori and Pacific Islanders, Asians, and Europeans. This group represents a large proportion of those who purchase and wear pounamu, and findings should generalise to this segment.
1.4. Proposed contributions of the research

As noted above, certification has often been used by marketers to influence perceptions of authenticity for goods, services, experiences, and people, but the certification of authenticity has been neither theoretically nor empirically examined. Consequently, the overarching purpose of this thesis is to evaluate the influence of certification on perceptions of product authenticity.

Interpretive research shows that authenticity is complex, nuanced, and multifaceted, but prior quantitative research (Grayson and Martinec 2004) has only operationalised it as a dichotomous variable. Chapter 2 explains why a more nuanced measure of authenticity is now needed to move the field forward by shedding light on how perceptions of product authenticity can be influenced. Based upon these foundations, this research has four proposed contributions:

1. The first proposed specific contribution of this research is methodological. This thesis will demonstrate how lexicographical analysis can be used in conjunction with traditional scale-development approaches to develop an interval-level, context-free scale that measures abstract concepts such as perceived authenticity.

2. The second proposed research contribution is an increased theoretical understanding of the interrelationships of certification and authenticity. In particular, this research will contribute to the understanding of the relative influence of two non-mutually exclusive forms of certification (country certification and ethnic certification) on perceptions of product authenticity.

3. The third proposed contribution of this research is theoretical: an examination of how certification and perceived age separately influence perceptions of product authenticity. This will shed light on one of the boundary conditions for certification effectiveness.
4. Finally, the fourth proposed contribution of this research is the provision of practical implications to marketing and advertising practitioners. In particular, this research offers insight into the effectiveness of using the non-contextual cues of country certification, ethnic certification and perceived age when marketing and advertising products which could benefit from increased perceptions of authenticity.

1.5. Structure of the thesis

The remainder of this thesis is structured as follows. Chapter 2 presents a literature review which explores the construct of authenticity in other fields, and relates these findings to current practice within marketing. Chapter 3 provides a review of the research on certification, with some initial theoretical development about how certification works. Chapter 4 discusses the toi iho Maori Made and Buy New Zealand Made authenticity programmes which were used as a context for this research. Chapter 5 contains conceptual development, the research context, specific testable hypotheses, and the results of qualitative and quantitative exploratory research. Chapter 6 details the procedures used for scale development. Chapter 7 describes the methodology for the main studies, including experimental design, operationalisation, and the manipulation and/or measurement of the independent and dependent variables and covariates. Chapter 8 is a quantitative analysis of Study 1, and Chapter 9 analyses Study 2. Chapters 8 and 9 include tests of all hypotheses. The thesis concludes with Chapter 10 containing discussion, conclusions, contributions, and suggestions for future research.
Chapter 2. Authenticity: Literature Review

The search for authenticity is central to many academic disciplines: arts, archaeology, antiquities, folklore, anthropology, existential philosophy, and some branches of psychoanalysis, aesthetics, and music. More recently, the concept of authenticity has been studied extensively in tourism and by consumer culture theorists (Arnould and Thompson 2005) in the field of marketing. The large amount of research on authenticity indicates that this is a fertile area for study.

Exactly what is being studied is a more complex question, and is strongly framed by the perspective of the researcher. In a broad overview, Reisinger and Steiner (2006) considered how authenticity is regarded within different research paradigms. This article has been contentious and provoked several rejoinders (including Belhassen and Caton 2006). Reisinger and Steiner suggest that modernist researchers, and those with a positivist bent, see a discernible objective basis underlying the authenticity of objects, practices and cultures. Constructivists, on the other hand, view authenticity as a social construction which is subjective, relative, and malleable. Finally, they suggest that postmodernists may doubt the relevance or veracity of the concept, even while the rise in postmodern sentiment is making authenticity more valued and sought after.

On balance, it appears that each school of thought offers a particular contribution. Consequently, this research is based on the premise that there are multiple valid bases for perceptions of authenticity, and that these underpinnings are largely socially constructed. It is also apparent that authenticity can be difficult to verify, and can be vulnerable to manipulation in commercial contexts. Given the confusion among academics about authenticity, one might conclude that the general public would have even less clarity about the concept. This does not, however, mean that it is futile to research general perceptions of authenticity. It is very common for people to have a rudimentary understanding of a concept, but nonetheless to have
strongly-held and consistent opinions about it. This makes it possible, in many circumstances, to develop reliable measures of concepts which respondents may be unable to fully articulate. So long as the researcher does not overinterpret or overgeneralise, it is possible to develop a helpful understanding of what consumers consciously think about such a concept.

2.1. Authenticity research in marketing

The existing research on authenticity in marketing has been well accepted, but it is less extensive than studies of authenticity in other fields. This literature review will explore the construct of authenticity in a range of disciplines, and relate these to current practice within marketing. A basic feel for the nature of authenticity research in marketing can be gleaned from a few pieces of research. Arnould and Thompson (2005) place research into authenticity within consumer culture theory (CCT) as part of understanding consumers’ own sense of self. They summarise this by saying that “… the market produces certain types of consumer positions that consumers can choose to inhabit” (Arnould and Thompson 2005, p. 871). Authenticity is, then, a position that consumers can align themselves with or towards. Arnould and Thompson link this specifically to research into personal authenticity, and to the authenticity of tourism experiences (Grayson and Martinec 2004).

Grayson and his colleagues (Grayson and Shulman 2000; Grayson and Martinec 2004) have taken a deductive, theory-based approach, and successfully applied semiotic concepts to authenticity in a generalisable way. This is solid foundational work, but it leaves more subtle aspects of authenticity unexplored. Arnould and Price (1993, 2000) use an inductive approach to develop theory. By observing authentic experiences and “authenticating acts,” they develop generalisable schemas for understanding these phenomena. Beverland (2005a, 2005b) and his co-authors (Beverland, Lindgreen, and Vink 2008) used an inductive approach to understand what creates perceptions of authenticity in the specific contexts of wine and Trappist beers. Gilmore and Pine (2007) took an applied approach, and used prior academic work on authenticity to frame normative approaches for use in the marketplace.
Subcultural approaches to authenticity have also been frequently researched, perhaps because they offer interesting contexts and exemplars of the authenticity construct. Cars, for example, are important to the American psyche, and researchers have examined the contexts of genuine classic cars (Leigh, Peters, and Shelton 2006) and a modern remake of a classic car design (Brown, Kozinets, and Sherry 2003). Arthur (2006) considered authenticity in the context of the Australian hip hop subculture culture.

The growing salience of authenticity is seen in greater visibility in the business press, including a fictionalised Harvard Business Review case study (Weinberger 2008) and an entire book devoted to marketing via authenticity (Gilmore and Pine 2007). Recent scholarship in authenticity is so extensive that it has become a small industry. Given this increasing interest, it is useful to explore some of the broad scholarship around authenticity in order to place future work into context.

2.2. Authenticity: an introduction

Lionel Trilling (1972) offered an important discussion of authenticity in Sincerity and Authenticity. Trilling leaves no doubt that the construct of authenticity is a difficult one: “… authenticity is implicitly a polemical concept, fulfilling its nature by dealing aggressively with received and habitual opinion” (Trilling 1972, p. 94). The etymology of the word polemic shows the depth of this aggression: it comes from the Greek polemikos (hostile), after polemos (war). Authenticity may be important, but it is unlikely to be a polite, stable and well-behaved construct. Even developing a working definition is a challenge.

In its fullest meaning, authenticity is an absolute. Trilling (1972) emphasises the significance of the construct:

“It [authenticity] is a word of ominous import. As we use it in reference to human existence, its provenance is the museum, where persons expert in such matters test whether objects of art are what they appear to be or are claimed to be and therefore worth the price that is asked them—or, if this has already been paid, worth the admiration they are being given. That the word has become part of the moral slang of our day points to the peculiar nature of our fallen condition, our anxiety over the credibility of existence and of individual existences.
An 18th-century aesthete states our concern succinctly—‘Born originals,’ Edward Young said, ‘how comes it to pass that we die copies?’ No one has much difficulty with the answer to this question. From Rousseau we learned what destroys our authenticity is society—our sentiment of being depends upon the opinion of other people.” (Trilling 1972, p. 93)

Marketers have understood the central and growing importance of authenticity, and are using it as an important concept in brand positioning. Brands are clearly part of the culturally constituted world (McCracken 1986), and as such they are part of society. Brands may summon up or rely upon authenticity appeals, but they feed back into the society which can and does restrain personal authenticity. By building authenticity for themselves, brands may actually reduce the personal authenticity of their customers. Critics who dislike the term consumer, believing it to be an insult, make this linkage. The No Logo (Klein 2000) debate implicitly takes this position, suggesting that brands are directly destroying cultural and personal authenticity. As brands become more authentic, people become more artificial.

Even a cursory review of authenticity suggests that it deals with issues related to the bedrock of culture, society and social identity, and personhood. This chapter reviews the literature from a range of disciplines including marketing, tourism, arts, archaeology, and cultural studies. The total literature on authenticity is vast, stretching across many academic fields for multiple centuries. The purpose of this review is to develop a sufficient understanding to allow authenticity to be properly understood, frame, and operationalised for empirical work.

2.3. Schemas of authenticity

Authenticity is a complex multidimensional construct with many context-specific aspects. A number of schemas of authenticity have been developed in various fields. These fall into two basic forms. First, there are schemas which suggest different forms or types of authenticity. Examples of this include Wang (1999) in tourism, Dutton (2003) in art and aesthetics, or Beverland, Lindgreen and Vink (2008) in marketing. Secondly, there are schemas which outline aspects or antecedents of authenticity, such as Wherry (2006) in sociology and consumer culture theory, Beverland (2005) in marketing, or McIntosh (2004) in tourism.
The table below reviews studies which suggest schemas for authenticity, with a brief overview of their context and focus, contributions and limitations.

<table>
<thead>
<tr>
<th>Author</th>
<th>Context and Focus</th>
<th>Contributions</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beverland 2005</td>
<td>Marketing, wines</td>
<td>Authenticity in wine consists of heritage and pedigree, stylistic consistency, quality, relation to place, production method, and downplaying commercial motives.</td>
<td>Schema was empirically derived, and may require further testing. Certification of wines is common, but was not elicited in these interviews.</td>
</tr>
<tr>
<td>Beverland, Lindgreen and Vink</td>
<td>Marketing, beer</td>
<td>Three forms of authenticity emerged: pure or literal, an unbroken commitment to tradition and origin; approximate, and iconic resemblance to historical referents; and moral, a variant of authenticity as defined in existential philosophy, trueness to self.</td>
<td>Research used advertising as prompts, which inherently frames and limits results. Context has a strong and distinguished history, and may not translate to more mundane product categories.</td>
</tr>
<tr>
<td>Caruana, Crane and Fitchett</td>
<td>Tourism, guidebooks and independent travellers</td>
<td>Independent travellers defy inaccessibility and inauthenticity, and seek good value. While cultivating independence, they rely on guidebooks to mediate their perceptions of authenticity.</td>
<td>Applicable only in contexts in which the experience of authenticity is mediated by media or, potentially, by other individuals.</td>
</tr>
<tr>
<td>Dutton 2003</td>
<td>Art and aesthetics, painting and sculpture</td>
<td>Defines nominal authenticity as showing correct origins, authorship, or provenance; expressive authenticity is a true exemplar of a culture, tradition, or artist’s intent.</td>
<td>Nominal authenticity is provable from evidence of indexicality; expressive authenticity is a value judgment with limited anchoring.</td>
</tr>
<tr>
<td>Eisend and Schuchert-Güler</td>
<td>Marketing, review of 30 existing studies</td>
<td>Finds four antecedents to counterfeit purchase: (person, product, social/cultural, purchase situation/mood), and two moderators (attitude to counterfeits, counterfeit purchase intention), which lead to purchase of counterfeits. Finds lack of general theory, shortage of in-depth qualitative insight, and need for further investigation.</td>
<td>Review article with no particular limitations.</td>
</tr>
</tbody>
</table>

Table 2.1: Schemas of Authenticity
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Gilmore and Pine 2007</td>
<td>Marketing, product and service design</td>
<td>Considerable effects of evaluator and context on judgments of authenticity. Assert that all commercially-created authenticity is, at some level, fake. Suggest five genres: natural, original, exceptional, referential, and influential authenticity.</td>
<td>Employs extensive case study documentation. Schema of authenticity not empirically tested or peer-reviewed.</td>
</tr>
<tr>
<td>Mantecón and Huete 2008</td>
<td>Tourism and sociology, residential tourist development</td>
<td>Authenticity of place is based on a spatial factors (built and natural environments) and psychosocial factors (values and behaviours). Residential tourists seek authenticity of place, but local stakeholders in the tourism industry do not perceive this need.</td>
<td>Strong applicability to service provider-customer dyads. Model of authenticity applies only to built environment situations.</td>
</tr>
<tr>
<td>McIntosh 2004</td>
<td>Tourism, indigenous tourism experiences</td>
<td>Five dimensions of experience were found: gazing on a different culture, contrasting traditional to contemporary Maori lifestyles, perceived authenticity, personal interaction, and informal learning. Tourists are less concerned with specifics of the indigenous culture, and more concerned with seeing difference and diversity.</td>
<td>Generalizes to other indigenous contexts, but not further.</td>
</tr>
<tr>
<td>McIntosh and Prentice 1999</td>
<td>Tourism, cultural heritage sites</td>
<td>Experiential and emotive processes interact with tourism settings, resulting in a diversity of perceived authenticity. Three processes were found: reinforced assimilation (contrasting past to present), cognitive perception (new insights), and retroactive association (reliving personal memories).</td>
<td>Results are based on insights of tourists who are attracted to a site with potential to be personally meaningful. Will not generalize to lower-involvement experiences.</td>
</tr>
<tr>
<td>Reisinger and Steiner 2005</td>
<td>Tourism, object authenticity</td>
<td>Object-based authenticity is problematic because it varies based on the philosophical viewpoint of the observer, and may be too relative for general research purposes.</td>
<td>A philosophical, non-empirical piece which has provoked some strong dissent.</td>
</tr>
</tbody>
</table>

Table 2.1 (continued): Schemas of Authenticity
Several authors have explored the relationship between age, time, and history with authenticity. Under most circumstances, greater age of an object, place, or tradition is typically associated with stronger perceptions of authenticity. Because the relationship between age and authenticity is well-documented in the literature, it provides the rationale for including and manipulating object age as one variable in this research. Bendix (1997) views authenticity as a key concern of the folklore discipline. In her conceptualization, authenticity is concerned with a recovery of the essence of the past. Ironically, this can only be done with modern methods and mindsets. Yeoman et al. (2005) use the previous history of Scottish tourism demand based on authenticity-seeking to predict that such demand will continue in future. All of this demand is underpinned by a well-known and desirable historic narrative.

Arnould and Price (2000) implicitly consider the issues of time and authenticity. They are concerned with personal meaning in a postmodern world, and explore how people in this postmodern period derive personal authentication by re-enacting activities from the past. They do not say so explicitly, but an underlying theme

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<tbody>
<tr>
<td>Wang 1999</td>
<td>Tourism, authenticity of tourism experiences</td>
<td>Defined <strong>objective authenticity</strong> as the authenticity of originals, <strong>constructive authenticity</strong> as a projection onto objects or experiences by tourists or tourism producers, and <strong>existential authenticity</strong> as an aesthetic experience activated by tourist activities regardless of actual object authenticity.</td>
<td>Objective authenticity is confounded with the ability of a tourist to recognize or understand authentic originals. The three forms of authenticity are not conceptually related.</td>
</tr>
<tr>
<td>Wherry 2006</td>
<td>Consumer culture theory and sociology, the authenticity of handicrafts</td>
<td>Suggests that an authentic/inauthentic dichotomy is inappropriate in global markets. Finds four social sources of authenticity: <strong>reactive</strong>, <strong>reluctant</strong>, <strong>complicit</strong>, and <strong>transcendental</strong> (based on the inherent/sacred character of an object).</td>
<td>Schema depends upon intersection of local artisans and the global market. Applicability to other contexts is limited.</td>
</tr>
</tbody>
</table>

Table 2.1 (continued): Schemas of Authenticity

**2.4. Effects of age, time, and history**

Several authors have explored the relationship between age, time, and history with authenticity. Under most circumstances, greater age of an object, place, or tradition is typically associated with stronger perceptions of authenticity. Because the relationship between age and authenticity is well-documented in the literature, it provides the rationale for including and manipulating object age as one variable in this research. Bendix (1997) views authenticity as a key concern of the folklore discipline. In her conceptualization, authenticity is concerned with a recovery of the essence of the past. Ironically, this can only be done with modern methods and mindsets. Yeoman et al. (2005) use the previous history of Scottish tourism demand based on authenticity-seeking to predict that such demand will continue in future. All of this demand is underpinned by a well-known and desirable historic narrative.

Arnould and Price (2000) implicitly consider the issues of time and authenticity. They are concerned with personal meaning in a postmodern world, and explore how people in this postmodern period derive personal authentication by re-enacting activities from the past. They do not say so explicitly, but an underlying theme
implies that the past is seen as more authentic than the present. Brown, Kozinets and Sherry (2003) are more explicit about the equation of old with authentic, and make understanding a “nostalgia boom” into a key research topic. Peñaloza (2000) notes that history is both a source of value and an indicator of authenticity.

Goulding (2000) suggests that harking back to the past in inappropriate ways can actually reduce authenticity. By commodifying the past, we may be taking something authentic, and repackaging it in an oversimplified, theme park version. Clearly the relationship between the passage of time and authenticity is complex, and has not been fully explored. An old item may be authentic, or just old; a new item may be either authentic, fake, or somewhere in between. Time can add a patina of authenticity, but there is a more complex process at work than simple aging.

Cohen (1988, p. 379) suggested the concept of “emergent authenticity,” in which an object of interest does not change, but judgements of its authenticity modify over time: “… a cultural product, or a trait thereof, which is at one point generally judged as contrived or inauthentic may, in the course of time, become generally recognised as authentic, even by experts …”. For Cohen, authenticity is a dynamic concept, which can shift as our cultural tastes change.

Others have considered how concepts of authenticity shift over time. Salamandra (2004, p. 72) describes the way in which an older area of Damascus has been reframed as authentic: “Until the early 1990s a middle-class or upper-middle-class Damascene might never ventured into the Old City of Damascus, a place than associated with peasants and tourists, with the backwardness of the past. Today that same urbanite, whose parents or grandparents abandoned the old city and all it stood for, spends long leisure hours in this former backwater, in one of several recently opened restaurants. Here we have the transformation of old residential quarters into a leisure centre for the new middle-classes.”

Cohen-Hattab and Kerber (2004) implicitly accept the potential effects of time when considering the effects of cultural identity on perceptions of authenticity. They argue that authenticity need not be tied to a specific spatial-temporal cue. Instead,
authenticity is a multi-faceted negotiation among narratives, cultural identities, and objects or experiences. Ultimately, they suggest that concentration on “the authentic” may be misplaced, and that emphasis should be trained on the politics of how a place or experience is represented.

Taken as a whole, research to date clearly indicates that the passage of time, including the age of objects and antiquities, is one key consideration in understanding authenticity. Little is understood, however, about how indicators of time and age interact with other cues in the process of creating perceptions of authenticity. More research is needed in this area. The direct and moderated effects of object age on perceptions of authenticity will be explicitly considered in this research.

2.4.1. Object age as a variable in this research

Object age was chosen as a variable for this research for several reasons. First, on a theoretical level, it is an object-related factor which is plausibly related to perceptions of authenticity. Experimentally, perceptions of age can be easily manipulated by modifying a stimulus. After perceptions of age are manipulated, it is straightforward to confirm that the age manipulation was effective prior to completing analysis. Finally, the stimulus chosen for this work, a greenstone pendant, is an ancient design, but one which is still being produced today. Thus, this stimulus can be plausibly taken as either old or new, depending on the communication used. Taken together, these factors make object a plausible antecedent of perceptions of authenticity and an appropriate variable for this research.
The table below reviews a range of studies which consider the effects of age, time, or history on authenticity, with a brief overview of their context and focus, contributions and limitations.

<table>
<thead>
<tr>
<th>Author</th>
<th>Context and Focus</th>
<th>Contributions</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bendix 1997</td>
<td>Folklore, authenticity of folktales</td>
<td>Authenticity is central to folklore studies, but works to recover the essence of the past, which can only be done with modern methods and mindsets.</td>
<td>Limited to a folklore and historic context, no direct tie to marketing issues.</td>
</tr>
<tr>
<td>Brown, Kozinets and Sherry 2003</td>
<td>Marketing, branding and design</td>
<td>Considers overlap of contemporary brands with retro styling. Suggests that brand meaning can be revived through use of Aura as a character, Allegory as a plot, Arcadia as a setting, and Antimony as the community.</td>
<td>Provides a useful schema for analysing brand reinvigoration; little evidence that this has been adopted in practice.</td>
</tr>
<tr>
<td>Cohen-Hattab and Kerber 2004</td>
<td>Tourism, authenticity of place</td>
<td>Authenticity not be tied to a specific spatial-temporal cue; it is a negotiation among narratives, cultural identities and objects or experiences.</td>
<td>Research conducted in political and contested areas; findings may not generalize.</td>
</tr>
<tr>
<td>Goulding 2000</td>
<td>Consumer culture theory, authentic heritage attractions</td>
<td>Recapturing the past in inappropriate ways can reduce authenticity. Inappropriate repackaging commodifies the authentic.</td>
<td>Limited to a historic re-enactment context.</td>
</tr>
<tr>
<td>Salamandra 2007</td>
<td>Tourism, authenticity of place</td>
<td>Authenticity is malleable over time, old can be reframed as authentic.</td>
<td>Limited to historical locales.</td>
</tr>
<tr>
<td>Yeoman et al. 2005</td>
<td>Tourism and place marketing, Scotland</td>
<td>Explores a case study of Scottish tourism beginning in the 19th century. Contends that tourists' desire for experience, cultural capital, and authenticity were demonstrated in the past, and will be relevant in the future.</td>
<td>Observations on past trends can be validated, but future projections going forward cannot be directly assessed.</td>
</tr>
</tbody>
</table>

Table 2.2: Effects of Age, Time and History on Authenticity
2.5. Commodification of authenticity

Aspects of “real” life can, and often do, become commodities in the global marketplace. This has become an ongoing concern within the tourism literature, and created a large body of work concerned with commodification. MacCannell (1973) introduced the concept of pseudo-authenticity which he termed “staged authenticity,” a situation which seems authentic to the tourist, but is actually concocted as a product. Cohen (1988) further argued that staged authenticity will damage more genuine options, as the staged options can reduce tourists’ desires for truly authentic experience.

Goulding (2000) expanded this to a broader concern: “Commodification refers to the process by which things (and activities) come to be evaluated primarily in terms of their exchange value in a context of trade. The commodification hypothesis proposes that culture becomes popular culture and in the process a series of staged authenticity occurs” (Goulding 2000, p. 837).

Commodification of authenticity is usually viewed with a prejudicial lens. Tourism ventures, all staged, have commodified Maori culture with varying degrees of authenticity (Taylor 2001). Are New Zealand tourists better off having seen a Maori stage show, and eaten a commercial hangi? Is staged authenticity better than no authenticity at all? Ultimately, the answers to these questions depend upon the objectives and value structure of those who pose them.

Taylor (2001) adopts Trilling’s view of authenticity and sincerity, and applies it to Maori tourism ventures. He draws a clear distinction between highly staged and more authentic experiences. Spiller (2010) and Spiller et al. (2010) carried this research much further by exploring how Maori cultural tourism businesses create authentic experience for their customers. Based on a long-term ethnographic engagement with the businesses, Spiller found that the authentic experiences the businesses offered to customers were simultaneously fostering five culturally-based outcomes for their clients: spiritual, cultural, social, environmental, and economic
well-beings. The holistic approach and multidimensionality of the outcomes were seen as inseparable from the authenticity of the experience.

However, commodification can have positive economic benefits. Staged Maori experiences create employment for Maori performers, and may increase the number of tourists travelling to New Zealand. Peñaloza (2000) gives a sympathetic review of the ways in which cultural meetings can be adapted for commercial purposes. Similarly, Thompson and Tian (2008) look at the framing (ideological shaping) of marketplace myths for the Southern US tourist market: a mélange of pre-existing cultural myths, countermemories, and competing commercial interests, all placed in a setting of changing historical conditions. This allows for a continuing shift in perceptions of authenticity, dubbed emergent authenticity by Cohen (1988). In contrast, Penny (2006) examines the German fascination with American Indians, and concludes that there has been an ongoing process in which different audiences have taken control of the dialogue, to little good effect overall.

When considering objects or performances, the word commodification is pejorative. We implicitly assume, for many categories, that original is better. However, brands are inherently commodified multiples: a person or an artwork can be an original, whereas a brand may be replicated by the billions or even trillions. While this has clear economic advantages (economies of scale, standardisation of quality), there is an impact on image and perception. The value of originality is inescapably diluted when a brand becomes ubiquitous, and this can harm brand image. Ballantine, Warren and Nobbs (2006) argue that heritage and authenticity are pivotal determinants of brand success.

Another branch of the tourism literature explores place-specific aspects of the commodification of authenticity. Studies have included place branding in Denmark (Hornskov 2007); a look at the common heritage behind Romanesque sites in four European countries (Kolar and Žabkar 2007); place-brand essence in Scotland (Yeoman et al. 2005); the “authentic” Gettysburg Civil War experience (Chronis and Hampton 2008); and a look at farmers’ markets and exclusive authentic food purveyors (Zukin 2008). West and Carrier (2004) use an anthropological approach to
explore the political implications of ecotourism, a form of travel focused on offering an authentic experience.

All of these experiences and products are sought, consumed, and interpreted by tourists. Yeoman, Brass and McMahon-Beattie (2007) use the term “authentic-seeking” to describe a segment of tourists who are looking for authenticity in goods, services, experiences, or in their own lives. In a specific rejoinder to that article, Hall (2007) decries the use of authenticity-seeking as a market segmentation variable, apparently because it has the potential to devalue true authenticity through commodification. In addition, Hall sees authenticity as a psychological construct derived from the perceived connectedness of the individual to the external world. He argues that authenticity should not be seen as a property of places or things, but rather an outcome of connection. This conceptualisation easily accommodates Cohen’s (1988) property of emergent authenticity, in which the authenticity of a given object or experience can be judged differently over time.

The table below reviews a range of studies which consider the effects of commodification of authenticity, with a brief overview of their context and focus, contributions and limitations.
<table>
<thead>
<tr>
<th>Author</th>
<th>Context and Focus</th>
<th>Contributions</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bendix 1997</td>
<td>Folklore, imitations and fakery</td>
<td>Obvious imitations can be as interesting as the original; near-perfect imitations can undermine the original.</td>
<td>These insights apply only to narrow contexts, and have limited relevance in a commercial context.</td>
</tr>
<tr>
<td>Chronis and Hampton 2008</td>
<td>Tourism and place marketing, Gettysburg Civil War experiences</td>
<td>Found consumer perceptions of site authenticity articulate in five ways: object-related, factual, locational, personage, and contextual. These findings can be used to stage authenticity.</td>
<td>Will generalize to sites with strong histories. Not applicable to object authenticity.</td>
</tr>
<tr>
<td>Cohen 1988</td>
<td>Tourism, authenticity of tourist experiences</td>
<td>Authenticity is not fixed but emergent. Staged authenticity may supplant genuine authenticity. Commoditization need not destroy the authenticity of tourism experiences, new forms of authenticity can emerge over time.</td>
<td>No empirical work, limited to tourism contexts.</td>
</tr>
<tr>
<td>Condevaux 2009</td>
<td>Anthropology and tourism, Maori shows</td>
<td>Argues that authenticity is a social construction, and that indigenous performers consciously create a modern authenticity which is not just a faithful replica of ancient practices.</td>
<td>Applicable to evolving indigenous cultures and creator-tourist interactions. Does not apply directly to object authenticity.</td>
</tr>
<tr>
<td>Dorson 1959</td>
<td>Folklore, tales and songs</td>
<td>Defined fakelore as contrived modern folklore which consciously misrepresents traditional sources.</td>
<td>Limits authenticity to a narrow fake-real dichotomy, although more subtle shades often exist.</td>
</tr>
<tr>
<td>Girardelli 2004</td>
<td>Communications and semiotics, ethnic food</td>
<td>Analyses an Italian food chain in the U.S., finding use of stereotypes conveyed through seven themes, a commodified constructed identity, and a depletion of cultural capital. Genuineness/authenticity is one aspect of mythmaking based on authentically fake Italian artefacts.</td>
<td>Analyzes authenticity appeals which are socially constructed, but does not explore authenticity per se.</td>
</tr>
</tbody>
</table>

Table 2.3: Commodification of Authenticity
<table>
<thead>
<tr>
<th>Author</th>
<th>Context and Focus</th>
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<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holtorf and Schadla-Hall (1999)</td>
<td>Archaeology, artefacts and historic sites</td>
<td>Observers of authenticity are often given a sense that they are consuming reality. The aura of authenticity is found to be dependent upon and negotiated in context. Replicas can be, in some contexts, more authentic than originals.</td>
<td>Broadly applicable to contexts in which authenticity may be politicized.</td>
</tr>
<tr>
<td>Klein 2000</td>
<td>Business ethics and globalisation</td>
<td>Brands and globalisation destroy cultural and personal authenticity.</td>
<td>Strong advocacy of one position, no alternatives explored.</td>
</tr>
<tr>
<td>Lau 2009</td>
<td>Tourism, social realism</td>
<td>Holds that that MacCannell's 1973 work on staged authenticity embodies both relationship and object authenticities. Suggests that authenticity be conceptualized solely as object authenticity.</td>
<td>Conceptual article with no empirical work.</td>
</tr>
<tr>
<td>MacCannell 1973</td>
<td>Tourism, authentic performances</td>
<td>Performances for tourist audiences can seem authentic while actually being a created product, called &quot;staged authenticity.&quot;</td>
<td>Broadly applicable to tourism performances, but may not generalize to purely commercial products.</td>
</tr>
<tr>
<td>Penny 2006</td>
<td>Cultural studies, German attitudes towards American Indians</td>
<td>Consumer audiences are fascinated by different peoples, but stereotyping is the norm. Dialogue is controlled by different audiences in problematic ways.</td>
<td>Considers first-world attitudes towards a foreign indigenous people. Applicability limited to similar contexts.</td>
</tr>
<tr>
<td>Reisinger and Steiner 2006</td>
<td>Tourism and philosophy, heritage sites</td>
<td>Suggests that many tour guides over-interpret locales. This leads to weaker perceptions of authenticity because tourists passively absorb information rather than discovering meaning for themselves.</td>
<td>Ramifications of providing less tourism information, and hence a lower level of perceived customer service, are not explored.</td>
</tr>
<tr>
<td>Taylor 2001</td>
<td>Tourism, Maori tourism ventures</td>
<td>Different levels of authenticity are apparent, simultaneously staged but also attempting sincerity.</td>
<td>Findings may generalize to other post-colonial settings, but are not applicable to less-commercialized contexts.</td>
</tr>
</tbody>
</table>

Table 2.3 (continued): Commodification of Authenticity
<table>
<thead>
<tr>
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<th>Contributions</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Turney 1999</td>
<td>Anthropology and the law, authenticity of Native American sculpture</td>
<td>Assumes that identities are constructed, political, and cannot be deemed as authentic in the context of a U.S. law. Describes the actions of Jimmy Durham, a Cherokee sculptor, who de-authenticates his ethnicity as a political and artistic act. Mandating standards of authenticity is found to marginalize indigenous peoples.</td>
<td>Research was conducted in a very circumscribed socio-legal context.</td>
</tr>
<tr>
<td>Wang 2007</td>
<td>Tourism, Chinese homestays</td>
<td>Authenticity is a negotiation between proprietors and guests. Customized authenticity blends traditional and inauthentic elements to develop a new and more palatable service offering.</td>
<td>Applies to contexts which modernize or re-envision traditions, but only applicable if there is a traditional underpinning.</td>
</tr>
<tr>
<td>West and Carrier 2004</td>
<td>Anthropology, ecotourism</td>
<td>Western ecotourism can project first-world values onto visited locales. Positions ecotourism as an exercise in hegemony which can shape both natural worlds and developing economies.</td>
<td>Results only apply to contexts with an intersection of Western and developing economies in combination with ecotourism projects.</td>
</tr>
<tr>
<td>Zukin 2008</td>
<td>Cultural studies, authentic food</td>
<td>Provision of authentic foods can lead to commercialization, commoditization, and ultimately gentrification and displacement of the social and ethnic groups which originated the authentic offerings.</td>
<td>Research was conceived in a spatial matter. It is applicable to authenticity-driven development, but does not extend to object authenticity.</td>
</tr>
</tbody>
</table>

Table 2.3 (continued): Commodification of Authenticity

2.6. Counterfeiting and the limits of authenticity

One way to gain insights into authenticity is by contrasting it to the inauthentic. Counterfeit products are illegal copies of legitimate commercial brands. Counterfeits are not, however, direct opposites of authentic products. All competent counterfeit products bear a strong resemblance to the legitimate products they emulate, and hence have iconic authenticity. Some counterfeits are, for all intents and purposes,
physically identical to the original product they copy. In many cases, the visible and tangible aspects of the product appear real, whereas other important aspects of legitimate products (legality, retailer, heritage and pedigree, warranty, etc.) are intangible and invisible. This often makes it difficult for casual observers, or even purchasers, to distinguish real from fake. Rutter and Bryce (2008) suggest that it is impractical to segregate consumption into categories of legitimate and illegitimate purchases, as different shades of authenticity are common in the marketplace.

Vann (2006) used an ethnographic approach to understand perceptions of authenticity in Vietnamese markets. Vann finds that Vietnamese consumers do not view real and counterfeit as purely antithetical constructs. Rather they see “model goods,” the name-brand genuine items, which serve as prototypes for “mimic goods” (Vann 2006, p. 289). Mimic goods are not false or deceptive: they are real knock-offs, which are affordable, useful and unavoidable: counterfeit, but without the stigma that term implies. A newer stream of research on counterfeiting (e.g., Gino, Norton, and Ariely 2010) has begun to explore the psychological effects of counterfeit consumption in the developed world. Initial work indicates the counterfeit consumption may modify ethically-grounded behaviours in areas significantly outside consumption decisions.

Russell, Norman, and Heckler (2004) also deal with authenticity-related concepts. They developed scaling to measure the extent to which television viewers are intimately connected to the plot and characters of television programmes. Many television shows are inherently artifice, but they are often not perceived that way: viewers easily blur the boundaries between what occurs in the show and external reality. A model for how this paradox is negotiated in the context of reality television was developed by Rose and Wood (2005). Under conditions of high involvement and repeated viewing over time, it can become difficult for viewers to fully differentiate what is artificial, and what is authentic. Russell, Norman, and Heckler suggest that this can even result in shaping of personal behaviour (modelling and imitation) and changes in consumption patterns (buying imitative fashion or show-related paraphernalia).
The table below reviews studies on different aspects of counterfeiting, with a brief overview of study context and focus, contributions and limitations.

<table>
<thead>
<tr>
<th>Author</th>
<th>Context and Focus</th>
<th>Contributions</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commuri 2009</td>
<td>Marketing, luxury brands</td>
<td>Found that consumption of counterfeit goods by others affected legitimate consumers’ brand perceptions. Legitimate buyers used three coping strategies: flight from the brand, reclamation of its heritage, and abranding (disguising origins).</td>
<td>Illustrates important interactions in heavily counterfeited categories. Not applicable in other contexts.</td>
</tr>
<tr>
<td>Rutter and Bryce 2008</td>
<td>Sociology and psychology, counterfeit leisure items</td>
<td>Purchase and consumption of counterfeit goods is commonplace, occurs within existing social networks and familiar locations, is closely related to ordinary consumption behaviour, and is difficult to segregate from legal consumption.</td>
<td>Study is descriptive, and does not explain individual factors underlying consumption of counterfeits.</td>
</tr>
<tr>
<td>Thompson, Rindfleisch, and Arsel 2006</td>
<td>Marketing and consumer culture theory, brand-mocking images</td>
<td>Sarcastic doppelgänger images can interact with and undermine the authenticity of the brand they deride. However, such images only work if the target has some pre-existing validity and authenticity.</td>
<td>Illuminates one aspect of authenticity by contrast, but applies only in a specialized culture-jamming context.</td>
</tr>
<tr>
<td>Vann 2006</td>
<td>Anthropology, counterfeit in Vietnamese markets</td>
<td>Vietnamese consumers do not stigmatize counterfeits, or view real and counterfeit as antithetical. Genuine items are seen as &quot;model goods&quot; upon which &quot;mimic goods&quot; are modelled.</td>
<td>Research was conducted in a developing economy with limited intellectual property protection. Results will generalize only to similar contexts.</td>
</tr>
<tr>
<td>Wilcox, Kim, and Sen (2009)</td>
<td>Marketing, luxury brands and counterfeits</td>
<td>Social motives (expression or inclusion) drive desire for counterfeit luxuries. Consumption of counterfeits decreases preference for the real brand. Preferences for counterfeit luxuries vary depending on whether product is value expressive or social-adjustive.</td>
<td>Applicable only in contexts with legitimate brands and faithful knockoffs; provides insight only in an authentic-inauthentic dyad.</td>
</tr>
</tbody>
</table>

Table 2.4 (continued): Counterfeits and Inauthenticity
2.7. Authenticity in cultural studies

A number of studies from a range of disciplines, including cultural studies, archaeology, folklore, tourism, and anthropology have considered the meaning of authenticity in particular cultural contexts. Authenticity has a complex and relationship with the culture in which it occurs: authenticity is derived from the culture, but at the same time it also helps create that culture. This work has a strong conceptual tie to much of the work in the tourism literature, with extensive treatment of concepts related to staged and emergent authenticity.

The table below reviews a range of research in cultural studies which consider different aspects of authenticity, with a brief overview of study context and focus, contributions and limitations.

<table>
<thead>
<tr>
<th>Author</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Bendix 1997</td>
<td>Folklore, origin of folklore studies</td>
<td>Absolute standards of authenticity are inappropriate. Many folkloric subjects include both traditional elements and modernized inventions. Cultural shifts change judgments of authenticity.</td>
<td>Applies to commercial speech, but limited applicability to most products and services.</td>
</tr>
<tr>
<td>Gyimóthy and Mykleton 2009</td>
<td>Tourism and services marketing, extreme ethnic foods</td>
<td>Authenticity of a traditional Norwegian food has shifted with context. A nostalgic rural dish (sheep’s head) has been commodified as extreme cuisine, and helps define a place brand.</td>
<td>Highly relevant to unusual foods and traditions, but not generalizable to most commercial products.</td>
</tr>
<tr>
<td>Hornskov 2007</td>
<td>Tourism and place marketing, Denmark</td>
<td>Place branding is a complex authentication process which occurs in an ever-shifting context. The meaning of a place brand cannot be fixed.</td>
<td>Highly applicable to branded places, but does not extend to authenticity of services or objects.</td>
</tr>
</tbody>
</table>

Table 2.5: Authenticity in Cultural Studies
<table>
<thead>
<tr>
<th>Author</th>
<th>Context and Focus</th>
<th>Contributions</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kierans and Haeney 2010</td>
<td>Sociology and anthropology, ethnic food</td>
<td>An authentic working-class dish, scouse, has become symbolic of the people who consume it, and the renaissance of Liverpool. The dish has been commodified in an unusual, more gentrified manner.</td>
<td>Applicable to everyday consumption which is reframed as authentic as culture shifts. Not relevant to stable cultural situations.</td>
</tr>
<tr>
<td>Peñaloza 2000</td>
<td>Marketing and consumer culture theory, Western myths at rodeos</td>
<td>Marketers explicitly produce cultural meanings in creating economic value. Cultural meetings can be adapted for commercial purposes which simultaneously commoditize and preserve the authentic.</td>
<td>Research was conducted in a heavily mythologized context with strong commercial aspects. Generalizability may be limited to similar contexts.</td>
</tr>
<tr>
<td>Spiller 2010 and Spiller et al. 2010</td>
<td>Management and tourism, Maori tourism ventures</td>
<td>Businesses fostered five culturally-authentic outcomes: spiritual, cultural, social, environmental, and economic well-beings.</td>
<td>Findings generated in small and highly specialized ethnic businesses; do not generalize directly to more commercial enterprises.</td>
</tr>
<tr>
<td>Staley 2008</td>
<td>Public affairs, restaurant food</td>
<td>Links &quot;slow food&quot; movement directly to authenticity seeking consumers.</td>
<td>Little theoretical underpinning.</td>
</tr>
<tr>
<td>Thompson and Tian 2008</td>
<td>Marketing and consumer culture theory, tourism marketing</td>
<td>Cultural myths from the past are reshaped in the present for commercial purposes, leading to transfigured commercial myths and popular perceptions.</td>
<td>Research was conducted in a highly politicized locale with emotionally-charged cultural memories. Results may generalize only to similar contexts.</td>
</tr>
<tr>
<td>McGhie 2009</td>
<td>Archaeology, museums and heritage locales</td>
<td>Authenticity is framed by physical and conceptual locations, and modified by audience experiences and post-colonial issues. This interacts with and can override archaeology-based authentication.</td>
<td>Applies to place-based marketing with historical overtones.</td>
</tr>
<tr>
<td>Myrberg 2004</td>
<td>Archaeology, authenticity of ancient monuments</td>
<td>Assessment of authenticity is complex and multidimensional. Value judgments must be made about the relative importance of preserving the past, restoration, and allowing current use.</td>
<td>Broadly applicable to monuments and historic sites, some potential applicability to aspects of restoration and object authenticity.</td>
</tr>
</tbody>
</table>

Table 2.5 (continued): Authenticity in Cultural Studies
<table>
<thead>
<tr>
<th>Author</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Smith 2001</td>
<td>Archaeology, national studies</td>
<td>Archaeological concepts and practices contributed to the modern idea of a territorial nation by understanding the authenticity of material culture, placing perspective on antiquities in history, and its ability to analyze continuity and change.</td>
<td>Provides conceptual background, but little theoretical support.</td>
</tr>
<tr>
<td>Spooner 1986</td>
<td>Cultural studies, oriental carpets</td>
<td>Authenticity is a dialectic, with the gulf in perceptions between producers and consumers. Maintaining the perceived authenticity of producers is essential.</td>
<td>Authenticity is vaguely defined, applicability limited to handcrafted items.</td>
</tr>
<tr>
<td>Upton 2004</td>
<td>Archaeology, authenticity and ethnicity</td>
<td>Authenticity is a negotiated concept, with ethnicity viewed in a positivistic way, with assumptions that ethnic culture is stable, and that it is partially manifested in the material world. Ethnicity should be viewed dynamically, and collective notions of authenticity considered at an individual level.</td>
<td>Provides conceptual understanding, but applicable only at the cultural-group level.</td>
</tr>
</tbody>
</table>

Table 2.5 (continued): Authenticity in Cultural Studies

2.8. Quantitative approaches

Authenticity is a nuanced construct, and the preponderance of research in the area has been qualitative or conceptual in nature. A relatively recent stream of research has developed using quantitative methods to scale, measure, and model authenticity in a variety of contexts. This current research is positioned within the stream. Most of the prior quantitative research has occurred within the tourism discipline, and has concentrated on visitor perceptions of historic and archaeological sites. Because of this context, this research has generally been designed to measure aspects of service encounters in a specific geographical locale with relatively strong pre-existing image attributes. Revilla and Dodd (2003) are an unusual exception, in that they assess factors creating perceptions object authenticity in a factor analytic framework.
The table below reviews a range of studies which have used quantitative methods to explore authenticity, with a brief overview of study context and focus, contributions and limitations.

<table>
<thead>
<tr>
<th>Author</th>
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</thead>
<tbody>
<tr>
<td>Gino, Norton, and Ariely 2010</td>
<td>Psychology and marketing, counterfeit products</td>
<td>Experiment manipulated purportedly fake or authentically branded sunglasses. Respondents wearing counterfeit sunglasses cheated more on tasks, judged others to be less ethical, and felt less authentic which led to unethical behaviour.</td>
<td>Experiment has strong internal validity, but the tasks do not translate directly to real-world contexts.</td>
</tr>
<tr>
<td>Kolar and Žabkar 2007</td>
<td>Tourism and place marketing, Romanesque historical sites</td>
<td>In a regression model, found that authenticity, satisfaction, and interest in history were significant antecedents of future visitation intentions to a historical site.</td>
<td>Measures are context-specific, but should generalize to other historic sites.</td>
</tr>
<tr>
<td>Magnini, Miller, and Kim 2010</td>
<td>Tourism and hospitality, ethnic restaurant signage</td>
<td>Foreign language signage changed restaurant brand perceptions, but did not increase food authenticity expectations of diners.</td>
<td>Limited external validity, results based on single item measures.</td>
</tr>
<tr>
<td>Pantaro 2011</td>
<td>Marketing, perception of local cultural products</td>
<td>Culturally-related factors based on the ancient heritage of Italy affected current buying behaviors. Authenticity/culture-related factors have the strongest direct effect on consumer perception of all variables tested.</td>
<td>Specific measures were designed to measure attributes of Calabria, Italy, and will not generalize to non-comparable regions.</td>
</tr>
<tr>
<td>Revilla and Dodd 2003</td>
<td>Tourism, authenticity of pottery</td>
<td>Authenticity of Talavera pottery loads on five factors: appearance/utility, tradition and certification, difficult to obtain, locally produced, and low-cost. Perceptions vary by segment: local tourist judge authenticity on appearance and utility, while international visitors value local production for local consumption.</td>
<td>Factors are a mix of generalizable and context-specific, requiring adaptation for alternate contexts.</td>
</tr>
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</table>

Table 2.6: Quantitative Approaches to Authenticity
<table>
<thead>
<tr>
<th>Author</th>
<th>Context and Focus</th>
<th>Contributions</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kolar and Zabkar 2010</td>
<td>Tourism, heritage sites</td>
<td>Found the cultural motivations affect perceptions of object and existential authenticity, and both forms of authenticity increase customer loyalty.</td>
<td>All scales are highly customized to historic sites. Research will generalize to similar locales, but not other contexts.</td>
</tr>
<tr>
<td>Lee and Littrell 2006</td>
<td>Marketing and cultural studies, Internet shopping</td>
<td>Personal style and global ethical concerns drive beliefs about cultural products and website selling them. Belief in turn affects attitude toward shopping for cultural products on the web, which directly affects behavioural intention.</td>
<td>Offers a good descriptive study at a broad conceptual level. Does not explore formation of attitudes and beliefs.</td>
</tr>
<tr>
<td>Ramkissoon and Uysal 2011</td>
<td>Tourism, cultural and heritage sites</td>
<td>Find that perceived authenticity, motivation, information search, and destination imagery have a direct effect on intention to visit.</td>
<td>Proposed a model that perceived authenticity moderated motivation, information search, and destination industry, but tested only direct effects. Generalizes to historic and cultural sites, but not further.</td>
</tr>
<tr>
<td>Yu and Littrell 2003</td>
<td>Tourism and consumer behaviour, authentic crafts</td>
<td>Integrates tourism motivations and activities with product and process shopping orientations, found stronger support for process orientation. Suggests four sources of authenticity: personal aesthetics, uniqueness and workmanship, cultural/historical context, and artisan and materials.</td>
<td>Generalizability is limited by methodology, including small sample, specialized geography, and scaling issues.</td>
</tr>
</tbody>
</table>

Table 2.6 (continued): Quantitative Approaches to Authenticity

2.9. Personal authenticity, self-concept and consumption

The roots of the authenticity construct are arguably anchored in philosophy, and thus predate much of modern consumer culture. One can argue that questions of personal authenticity have always been important to individuals. We know from archaeological evidence that the earliest humans engaged in consumption practices not unlike our own, adorning themselves with clothing, jewelry, and tattoos. We could easily surmise that these behaviours were then, as now, tied to an individual's self and social identities.
Consumption is essential to human life, and authenticity concerns often affect consumption processes. Belk (1988, 1989) has discussed how experiences and possessions enhance individuals’ sense of themselves and personal authenticity. Many product categories possess attributes which may enhance individuals’ sense of authenticity. Organic food, for example, has meanings beyond nutrition and enjoyment. Staley (2008) links this movement directly to authenticity: “In Australia the slow food movement has tapped into that affluent group of consumers always looking for ‘authentic’ experiences” (p. 11). The existence of product categories which seem or feel more authentic suggests the possible transfer of meaning from product to consumer (McCracken 1986). While all consumers pursue some level of personal meaning from their consumption behaviors, there is a segment which is apparently driven by consuming in ways that perceived to be authentic. Yeoman, Brass, and McMahon-Beattie (2007) describe this segment as “authenti-seeking” consumers, and suggested they search out the authentic across a broad range of products, services, and experiences.

Zavestoski (2002) explores the same issue from the opposite perspective. In his work on voluntary simplifiers, he explores the mirror-image of consumer society: a group which seeks authenticity by not consuming, or by consuming less. Although his respondents are unusual, Zavestoski also considers authenticity to be a critical human issue which applies to all people. Drawing on work by Gecas (1986), he uses a variant of Maslow’s hierarchy of needs in which self-actualisation is split into efficacy and, at the apex of the pyramid, authenticity. In this schema the highest state of being, one which creates self-actualisation, is authenticity. When compared to ordinary consumers, the construct of authenticity is equally, if not more important, for voluntary simplifiers. Their objective—personal authenticity—is the same, but their strategies for achieving it are diametrically opposed.

The table below reviews a range of studies which consider the juxtaposition of self-concept and authenticity, with a brief overview of their context and focus, contributions and limitations.
<table>
<thead>
<tr>
<th>Author</th>
<th>Context and Focus</th>
<th>Contributions</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arnould and Thompson 2005</td>
<td>Consumer culture theory, sense of self</td>
<td>Links authenticity to consumers' identity, provides locus to align self with or towards.</td>
<td>Not tied to specific marketing issues.</td>
</tr>
<tr>
<td>Arnold and Price 1993</td>
<td>Consumer culture theory, authentic experiences as a service encounter</td>
<td>Authentic experiences enhance and create personal authenticity.</td>
<td>Specialized context limits generalizability of findings.</td>
</tr>
<tr>
<td>Arnold and Price 2000</td>
<td>Consumer culture theory, Authenticating acts and performance</td>
<td>People derive personal authentication from unique individual actions. Historically accurate performances connect individual players with the community. Group and individual authenticity may be in conflict.</td>
<td>Not tied to specific marketing issues.</td>
</tr>
<tr>
<td>Trilling 1972</td>
<td>Philosophy, definition and importance of authenticity</td>
<td>Authenticity is a central concern of human existence and meaning.</td>
<td>Importance of authenticity is discussed, but authenticity is only vaguely defined.</td>
</tr>
<tr>
<td>Taylor 1991</td>
<td>Philosophy, the importance of authenticity</td>
<td>Authenticity is negotiation between an individual and others requiring discovery and articulation of personal identity.</td>
<td>Limited to self-concept, no direct commercial applications.</td>
</tr>
<tr>
<td>Ferrara 1998</td>
<td>Philosophy, the importance of authenticity</td>
<td>Authenticity is central to understanding self, creating congruency between conduct and identity; authenticity is critical to modern civilization.</td>
<td>Limited to self-concept and broad societal implications, excludes social identity.</td>
</tr>
<tr>
<td>Belk et al. 1988, 1989; Belk 1990</td>
<td>Consumer culture theory and marketing, consumption of significant goods and experiences</td>
<td>Significant objects alter, extend and become part of self-concept. Objects contain no memories but owners act as if they do.</td>
<td>Research largely limited to unusual non-commercial contexts.</td>
</tr>
<tr>
<td>Schaefer and Pettijohn 2006</td>
<td>Marketing and personal selling</td>
<td>Authenticity of salespeople is significantly and positively related to sales performance.</td>
<td>Limited to business to business sales people using self-report measures.</td>
</tr>
</tbody>
</table>

Table 2.7: Personal Authenticity, Self-concept and Consumption
<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>Dillon 2004</td>
<td>Philosophy, Nietzsche's view of authenticity</td>
<td>Explores paradox of authenticity in Nietzsche's philosophy. Nietzsche viewed authenticity is honesty, but also supported falsehood to gain the desired end.</td>
<td>Limited to one specific philosopher’s perspective.</td>
</tr>
<tr>
<td>Yeoman, Brass, and McMahon-Beattie 2007</td>
<td>Tourism, authenticity-seeking tourists</td>
<td>Defines a segment of authenti-seeking tourists who search for authenticity from products, services, experiences, or within themselves. Suggests empirical trends useful to marketers.</td>
<td>A normative and descriptive approach, based on empirical observation. Little theoretical framing.</td>
</tr>
<tr>
<td>Beverland and Farrelly 2010</td>
<td>Marketing and consumer culture theory, self-authentication and goal seeking</td>
<td>Consumers focus on cues in objects which seem to convey authenticity. The decision-making process is driven by seeking identity benefits of control, connection, and virtue.</td>
<td>Additional goals, standards and strategies for interpreting authenticity and consumption remain to be discovered. Further work required on how consumers reconcile competing interpretations of authenticity.</td>
</tr>
<tr>
<td>Zavestoski 2002</td>
<td>Marketing and psychology, anticonsumption attitudes of voluntary simplifiers</td>
<td>One aspect of self-actualization (efficacy) can be acquired through consumption, but the other (authenticity) cannot. For this group, less consumption creates greater satisfaction.</td>
<td>Authenticity is sought by voluntary simplifiers in a way which most consumers find paradoxical. Findings will generalize to specific segments of people.</td>
</tr>
</tbody>
</table>

Table 2.7 (continued): Personal Authenticity, Self-concept and Consumption

2.10. Social identity and self-categorisation

Tajfel (1978) introduced the concept of social identity, suggesting that individuals inherently know that they belong to certain social groups, and that membership in these groups carries both emotion and value. It is a person’s deep knowledge of their group membership that creates (and reinforces) social identity. Tajfel held that individuals perceived and constructed their own place in society in part by perceiving their own relationships with a number of social groups. All people belong to multiple groups (such as ethnic, gender, corporate, or national identities), and social identity interacts with both self-identity and with context.
It is known that perceived social identity influences consumer decisions (Childers and Rao 1992). It is proposed here that, under certain conditions, an individual’s self-perceived social identity will also affect his perceptions of the authenticity of an object. Specifically, if an individual perceives the nature of an object to be compatible with his social identity, this research hypothesises he will be likely to judge that object as being more authentic than would otherwise be the case.

The characteristics of objects can add distinctiveness in such a way that it creates identity-like qualities. These characteristics may be related to country of origin, style, appearance, brand name, or other attributes. The compatible object becomes, to some extent, an exemplar or symbol of aspects of an individual’s social identity. A brief review of relevant literature on social identity is presented below, followed by evidence for the use of pounamu as a symbol of group identity.

2.10.1. Identity theory, social identity theory, and self-categorisation theory

Identity theory (Stryker 1968) was developed in sociology, and operates primarily in the domain of individual behaviour and the private self, giving special consideration to the roles which people may play in social circumstances. Social identity theory (Tajfel and Turner 1979) is a later approach from social psychology, and is more group-focused. Social identity theory suggests that people develop a self-concept as a result of their connections (or lack of connections) to particular social groups, and this helps them create and perceive their own place in the social order. Social identity is not the same as self-identity, and it builds self-esteem by associating the individual with favourably-perceived ingroup which he or she can view as superior to the outgroups. However, as discussed below, the theories around social- and self-identity are not in conflict. Both concepts can operate individually or in tandem, depending upon which is salient in a particular context.

Self-categorisation theory (Turner 1985) was an extension of social identification theory which helps provide more detailed explanations of the outcomes of identification with a particular social group. As individuals identify more closely with the ingroup, they undergo a process of depersonalisation, in which they begin
to reflect the relevant prototype of the group rather than their prior, more individuated identities (Hogg and Terry 2000). Turner also emphasises that individuals can take on a range of different identities, and these can easily become salient (Transue 2007).

As individuals depersonalise and change their self-perception and behaviour to conform to the relevant group prototype, this transformation can produce "normative behaviour, stereotyping, ethnocentrism, positive ingroup attitudes and cohesion, cooperation and altruism, emotional contagion and empathy, collective behaviour, shared norms, and mutual influence" (Hogg and Terry 2000, p. 123). Several of these attitudinal and behavioural shifts could be seen as relevant to the wearing of pounamu as a shared group norm.

Social identity theory has been expanded to consider how individuals, in their roles as customers, develop identification with the companies which serve them (Bhattacharya and Sen 2003). A narrower version of this approach, considering customer-brand relationship as the research domain, was suggested by Lam et al. (2010). This research proposes that social identity theory can be applied at the product category level, which is at a broader and more abstract level than prior research. This approach does not preclude customer-company or customer-brand relationships, but it does suggest that a product or service categories may have a general effect on social identity, regardless of their branding.

2.10.2. Social identity and self-identity

Much research, even on group processes and intergroup relations, uses personal self and issues of personal identity as the theoretical frame for understanding social behaviour, probably because the Western societies in which the research is conducted have a strong emphasis on individuality (Ellemers, Spears, and Doosje 2002). Nonetheless, there is ample research to indicate that a person's collective self and social identity also guide perceptions, emotions, and behavioural responses, and the collective/social self is not necessarily subservient to individual notions of identity (Gaertner et al. 1999).
The social identity approach integrates social identity theory (Tajfel 1978, Tajfel and Turner 1979) and self-categorization theory (Turner 1987). This conjunction of approaches allows for interaction between social identity, aspects of the self, and contextual factors. This complexity allows differing personal and/or social identities to become more salient depending on the circumstance, and means that identity-based outcomes are both complex and contingent.

Ellemers, Spears, and Doosje (2002) have suggested a six cell taxonomy based on two levels of commitment (low and high), and three types of threats to identity (no threat, a threat to individual identity, or a threat to group identity). Under each condition, concerns and motivations may vary, leading to differing responses by the individual. For this research, respondents faced no perceived threat to individual or group identity, and group commitment (to a self-perceived New Zealand identity) was partially manipulated by priming or not priming New Zealand identity. Given these conditions (no threat, varying levels of group identity), Ellemers et. al suggest that social perception and group identity are more important than self-perception attributes. This is consistent with the social identity approach taken in this research.

Differences in social identity are complex and idiosyncratic. We would logically expect differences based on country of origin, ethnicity, time of residence in New Zealand, and a number of other factors. Between-group factors were not analyzed because they are not directly relevant to the hypotheses under study. This research set out to determine whether different levels of New Zealand social identity, and whether priming of that social identity, could affect perceptions of authenticity of an object which is consistent with that social identity. For this analysis, understanding group differences is not required. What is required is an appropriate level, and variance, in the degree of identification with a New Zealand social identity. This condition was met.
2.10.3. Evidence of New Zealand national identity

Sibley and Liu (2007) examined associations between national symbols of New Zealand and ethnic identity. The research was operationalized at the level of social, rather than self-identity. This research used six symbols to represent New Zealand: the New Zealand flag, maps of New Zealand, a made in New Zealand a logo, a picture of a kiwi with "NZ" embossed below, and a picture of a silver ferns on a black background. The research found that both New Zealand European and Maori respondents strongly, and equally, associated each ethnic group with the New Zealand symbols. This provides empirical evidence that both New Zealand Europeans and Maori identify their ethnic group, as well as the other ethnic group, with broad symbols of New Zealand identity.

Jones and Smith (2005) consider intersecting levels of authenticity involved in making the Lord of the Rings films in New Zealand. A key point to their research is that New Zealand itself has a changing and strengthening sense of national identity. The creativity and entrepreneurship New Zealanders in the film industry is both symbolic of, and legitimizing for, this emerging sense of national identity.

Bell (2009) looked at the identity markers and rules which young adult New Zealanders of European extraction use to construct national identity. She found that respondents had a "readiness to claim a national identity as ‗New Zealanders‘ via the markers of birthplace and ancestry” (p. 152). While the respondents recognized that Maori also have strong (if not superior) claims to New Zealand identity, they were resolute in their own identification as Kiwis.

Jones and Smith (2001) considered a range of indicators (birth, citizenship, residence, language, religion, attitude towards laws, feelings of identification) which relate to perceived national identity. An exploratory factor analysis of data across 23 countries, including New Zealand, identified a two factor solution. In this solution, the first factor is named ascribed-objective (importance of country of birth, of residence, of citizenship, and religion). The second factor was called civic-voluntarist, (respect for local laws and feeling of local identity). New Zealand’s
pattern of national identity was quite similar to most of the countries measured, providing additional evidence of a coherent national identity. In a similar vein, Smith and Jarko (1998) looked at pride in specific national achievements, and found New Zealand rated fifth overall, after Ireland, the United States, Canada, and Austria. This too is evidence of a clear sense of New Zealand national pride and identity.

2.10.4. Visible signs of social identity

Category-level effects on social identity can be seen in an example of a “spectacular subculture” (Sweet 2005) concerned with the construction of the "extraordinary self" (Miklas and Arnold 1999), the Gothic or goth subculture. This highly self-conscious subculture expresses strong and contentious concerns over the authenticity of their objects, symbols and cultural lineage (Miklas and Arnold 2005) which are used to delineate themselves from "normals." These signs and symbols, including clothing, makeup, and hair style, are category-level attributes. They share certain visual characteristics (black, ornate, often Victorian clothing, evocative materials such as lace or PVC, and distinctive hair and makeup) which identify the wearer as a goth (the ingroup) and to differentiate him or her from "normals" (the outgroups). Thus the categories of clothing and makeup interact with individuals’ self-concept.

Clearly, the wearing of pounamu is far more subtle than goth fashion, and much more socially acceptable. This comparison is not meant to be pejorative. There are semiotic similarities between pounamu and radical fashion categories. Pounamu is a prominent and visible product category, which can convey a range of different messages depending upon the combination of the carving itself, the wearer, and the context. The wearing of pounamu almost certainly indicates some aspect of social identity: the wearer is very likely to have some connection to New Zealand or Maori, though ascertaining the nature of that connection often requires additional information. Simply by wearing the carving, an individual is likely to communicate his affiliation with one or more social groups. This communication depends almost
entirely on the category and product itself, with minimal effect from knowledge of the artisan/brand or retailer.

Ahuvia (2005) took a narrative theory approach to understanding loved possessions, and their role in constructing and maintaining a sense of self. Extending from the assertions by Belk et al. (1988) that identity is intimately concerned with consumption, and that possessions are part of the extended self, Ahuvia found that loved objects did help individuals construct a sense of self under difficult circumstances. Though this research was conducted with a narrow, individualistic conception of self, there is no reason that these findings might not extend to the collect self and group identity.

Pounamu is an emotive possession, and it seems likely that Ahuvia’s findings are directly relevant. Maori have strong traditions around pounamu, and these will frame the perceptions of the giver or recipient to a greater or lesser extent. These include the fact that pounamu is inherently a taonga (treasure), imbued with tapu (sacredness) from its association with provision of hospitality and mutual recognition (manaakitanga) as well as mana (spiritual power) and mauri (life-force) (Patterson 1992). These broad factors, in combination with the individual circumstances of the giving and receipt of pounamu as a gift, make it likely to have a high level of significance for many recipients. This makes pounamu more likely to be seen as an identity-related possession (Kleine, Kleine, and Kernan 1993), which is one of the items which an individual finds useful for enacting their self-identity.

2.10.5. Pounamu as a symbol of social identity

The meanings of pounamu are derived from Maori culture, and many of these meanings have been adopted and adapted by non-Maori. At a broad symbolic level, many Maori wear pounamu as a visible symbol of their membership and pride in Maori culture (Stuart 2007). While pounamu can be kept under clothing, next to the skin, it is most often worn as a prominent and visible piece. In this way, pounamu can be a very visible symbol of group membership and social identity. The knowledge of pounamu, the symbolism of objects crafted from it, and the traditions which surround
it are well-known by Maori, and to a lesser extent by other ethnicities. The cultural-level significance of pounamu is believed to be broadly similar for most Maori, who often view themselves as wearers or bearers of the pounamu, but not “owners” in the normal Western sense.

In addition to the broader meanings in a cultural context, there is also idiosyncratic symbolism which is created for each individual Maori bearer in a unique way. To the extent that other ethnicities understand these Maori customs, they can choose to incorporate them into their own narratives. Traditionally, pounamu is to be received as a gift, and not purchased for oneself. In the process of gifting, the object gains mana (spiritual power) and tapu (in the sense of sacredness) (Patterson 1992). If the item is passed on for generations, and gifted to or inherited by subsequent owners, the history of the piece and those who have worn it in the past becomes a narrative which is attached to the carving. In this process, the object gains additional mana from its prior owners and also from the retelling of its story (Ryan and Crofts 1997; Lillios 1999). Thus, several aspects are lent to the carving: the intended symbolism of the gift; what it implies about the relationship between the giver, recipient, and tribe; and the history of the object all add an additional resonance. Finally, these carvings are beautiful adornments in their own right, and function as a statement of the owner’s taste and fashion sense.

In addition to signalling group membership, many non-Maori and tourists may be attracted by the beliefs that pounamu absorbs the mana (spiritual power) of its wearer, and that it is symbolic of the fact that the wearer will eventually return to New Zealand.

2.10.6. Jewellery as symbols of social identity and group membership

Organisations commonly add symbols to a member’s wardrobe to proclaim group membership and social identity. Jewellery can be used as a symbol of membership in a religious group (e.g., a cross, crucifix, or Star of David), a civic organisation (Rotary Club lapel pin), a fraternal organisation (overt and disguised Freemasonry insignia), a military branch and unit (various badges and insignia), or a
high-performance cohort (Girl Guide and Scouting merit badges, McDonald’s performance award badges). In all of these examples, the primary use of the symbol is to proclaim the affiliation of the wearers: the groups which they are part of, and conversely, the groups with which they are not affiliated.

A greenstone carving can serve a similar function of signalling group affiliation. A particular piece of *pounamu* may have resonance in two different ways: as a symbol of group and social identity (as a Maori, or a New Zealander, or both), as well as the individual symbolism of the piece to the individual. These are discussed below.

There is direct evidence that symbols, including jewellery, are used by New Zealanders as a symbol of social or national identity. The notes accompanying a major exhibition of *pounamu* at Te Papa, The National Museum of New Zealand, notes that “In recent years, New Zealanders have come to value *pounamu* as a symbol of national identity” (National Museum Te Papa Tongarewa (2010). This is consistent with Smith’s (1991, 2003) ethno-symbolic theory of national identity. Smith suggests three progressively broader levels of belonging: ethnic categories (which are somewhat nominal), ethnic networks (which, like Maori, have a collective name, a myth of common origin, and shared activities leading to solidarity), and finally ethnic communities (*ethnie*) which are national in nature, and can include symbols, myths and memories, and values, traditions, and rituals. At the level of national identity, Smith sees a mutual reinforcement: symbols represent the national identity, and the national identity increases the potency of the symbols. Consistent with this view, Mitchell (2009) provides evidence of how many common symbols of New Zealand identity are included in Kiwi popular music.

Stewart (2007) does see different meanings which Maori and non-Maori ascribe to the meaning of *pounamu*. After noting that individual Maori may find particular and detailed symbolism when wearing a piece of *pounamu*, he acknowledges: “However, the symbol has a different meaning for the Pākehā wearing it: *pounamu* jewellery has become a New Zealand icon, and a symbol of identity. *Pounamu* pieces worn by Pākehā have significance because it is *pounamu* - the shape may be purely
This again affirms the importance of pounamu as a national symbol which crosses and transcends individual ethnic meanings.

Hodge and Hermansson (2007) underlined the power of pounamu as a symbol of New Zealand identity in noting its role as part of the psychological preparation of the New Zealand Olympic Team for the 2004 Athens Olympics. Mental preparation is a key factor in the success of elite athletes, and strong efforts are made increase the mental toughness of competitors. The overriding ethos of the New Zealand Olympic team was described as “one team-one spirit” which was designed to create “a firm sense of belonging and communal strength” (p8). An extensive and deliberate use of symbols (including the Silver Fern, a Maori feathered cloak, the New Zealand flag, uniforms, a traditionally carved wooden gateway (Waharoa), and Greenstone pendants) was made to reinforce social identity and the psychology of belonging, both to the team and to the nation which it represented. In the same vein, New Zealand Olympic team members, who travelled on different schedules, greeted each new Kiwi contingent with a haka, another very important cultural symbol.

Pounamu had a particular function for the New Zealand Olympic team, along with uniforms and their attached symbols, because it was a portable symbol of national affiliation.

“Greenstone (Pounamu), a jade-like stone found in certain parts of the country’s South Island, is a recognized treasure (a taonga) for Maori and New Zealanders as a whole. It is regarded as precious – “It is... a stone with mana” and those who see it and wear it receive honour. Again, the Maori tribes provided a large piece of Pounamu for the Games Team as a ‘touchstone’ for connection, strength and individual/collective mana, and each team member was given an individually carved Pounamu pendant, which was personally handed to them at a ceremony upon their arrival into the Village in Athens and Torino.” (Hodge and Hermansson 2007, p. 9)

These greenstone pendants were visibly worn by New Zealand athletes as they travelled about the Olympic Village. A similar function for pounamu was seen at the World Rowing Championships held in New Zealand in 2010. The top three finishers in each event were given a greenstone pendant along with the traditional medals, both as a symbol of mana, and as a souvenir of their time in New Zealand. In this context, pounamu was used as a symbol of New Zealand for visitors, which is consistent with the way many tourists choose to purchase greenstone. Sibley and Liu
(2007) note, in a related but non-team context, that many New Zealand Europeans wear Maori bone carvings when traveling overseas as a visible symbol of their home.

2.10.7. **Empirical evidence from Study 2: greenstone and social identity**

Consistent with prior research, Study 2 also provides good empirical evidence that greenstone is viewed as a symbol of national identity. Respondents were asked to respond to the statement “Wearing greenstone is a sign of Kiwi identity” on a 7 point scale, where 1= “strongly disagree” and 7 = “strongly agree.” Across the total sample, there was a mean of 4.75 with a standard deviation of 1.851, and a strong positive skew. Only a minority disagree with this statement, with 22.6% scoring below the scale midpoint at 3 or less. Another 19.1% of respondents are neutral (4 on the scale), and 58.3% are in agreement with the statement, scoring 5 or above. The most frequently cited answer was 7 on the scale, with 22.6% of respondents recording the strongest possible agreement with the statement. While there is disagreement from some respondents, the majority are clear agreement that greenstone does function as sign of Kiwi identity.

<table>
<thead>
<tr>
<th>Scale response</th>
<th>Frequency</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>98</td>
<td>8.1%</td>
<td>8.1%</td>
</tr>
<tr>
<td>2</td>
<td>85</td>
<td>7.0%</td>
<td>15.1%</td>
</tr>
<tr>
<td>3</td>
<td>91</td>
<td>7.5%</td>
<td>22.6%</td>
</tr>
<tr>
<td>4</td>
<td>232</td>
<td>19.1%</td>
<td>41.7%</td>
</tr>
<tr>
<td>5</td>
<td>225</td>
<td>18.5%</td>
<td>60.2%</td>
</tr>
<tr>
<td>6</td>
<td>209</td>
<td>17.2%</td>
<td>77.4%</td>
</tr>
<tr>
<td>7</td>
<td>274</td>
<td>22.6%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Total</td>
<td>1214</td>
<td>100.0%</td>
<td></td>
</tr>
</tbody>
</table>

**Table 2.8: Frequency Distribution of Scale Item:**

“Wearing greenstone is a sign of Kiwi identity.”

All ethnicities had a mean value above the midpoint of the scale, indicating general agreement. New Zealanders of both Maori and European descent did show significantly stronger agreement with the statement than other groups. A Bonferroni
post-hoc analysis following a significant ANOVA ($F_{(9, 1201)} = 3.263, p<.001$) found that Maori as a group have the highest agreement with the idea that greenstone is a sign of Kiwi identity (mean=5.62, s.d.=1.843). The Maori agreement was significantly higher than that for New Zealanders of European descent (mean=4.68, s.d.=1.881, difference significant at $p<.001$), Europeans (mean=4.73, s.d.=1.727, difference significant at $p<.033$), and Chinese (mean=4.24, s.d.=1.790, difference significant at $p<.001$).

It is clear that in many contexts pounamu can be a symbol of self-identity, particularly for Maori. However, in nearly all of the research contexts noted above, greenstone is seen and used as a symbol of social identity, of Kiwiness. This is consistent with the manner in which the stimuli were used for this research.

2.10.8. Social identity as a variable in this research

Social identity was chosen as a variable for this research for several reasons. First, on a theoretical level, it is an individual factor which is plausibly related to perceptions of authenticity. Experimentally, perceptions of social identity can be manipulated in straightforward ways by priming respondents with appropriate questions before seeing a stimulus. In the New Zealand context, the coherent sense of national identity is a robust social identity which can be appealed to in an experiment. Finally, the stimulus chosen for this work, a greenstone pendant, is well-known, and commonly used as a symbol of social identity in New Zealand. Taken together, these factors make social identity a plausible antecedent of perceptions of authenticity.

2.11. Semiotic approaches to authenticity

Semiotic approaches have been adopted in many fields, including marketing. Mick’s overview of the field (1984) considered a range of key issues, but did not yet apply semiotics to authenticity in a marketing context. Grayson and Shulman (2000) adopted Charles Peirce’s (1897) sign – object – interpretant schema, and applied it to irreplaceable possessions. Belk (1990) noted that significant objects cannot actually contain memories, though owners treat these objects as though they do. The Peircean
concept of indexicality—having a clear factual, spatial, or temporal link to objective reality—is a useful explanation for why significant objects appear to embody important memories. The object has touched something of significance, and that significance has seemingly “rubbed off” onto the object. Belief in indexical authenticity is so potent that it can transform the perception of strange or valueless objects—small possessions, clothing, even body parts—into religious relics. Believers find these relics worthy of veneration, or even attribute healing powers to them (Geary 1986).

There are clear problems with tying the concept of authenticity directly to properties of an object or experience. There may be no inherent characteristics of an object which indicate its indexical authenticity, for example. An object accompanied by a false narrative may evoke a genuine feeling of authenticity to an unsuspecting observer. Conversely, an object with a genuine history and provenance may be discounted or discarded if the narrative is unknown. In both cases, the perception is delinked from the “truth” behind the object itself.

Reisinger and Steiner (2005) argued that the concept of object-based authenticity cannot be generally used because it cannot be reconciled by individuals with different philosophical viewpoints (modernist-realist, social constructionists, and postmodernists). They suggest that if the concept of authenticity is so relative that only some can accept it, then it cannot be used for general research purposes. There is sharp scholarly disagreement on this issue. In contrast to the Reisinger and Steiner argument, Lau (2009) took a social realist approach, and suggested that authenticity be conceptualized only as object authenticity.

Later work by Grayson and Martinec (2004) looks further at the Peircean concept of iconicity, in which the perception of the sign results in a similar mental state to the perception of the reality in represents. Despite important early work in the area of symbolism (Levy 1959), the Peircean relationship between sign and object has not been explored to its full potential in marketing. Recent interest in this construct does appear to be increasing (e.g. Hirschman 2007).
Baudrillard (1983) made the issue of artifice a centrepiece of his work, and suggested three levels of simulation. The first order simulation is a representation of something real, and but which is clearly artificial, such as a map. In a second-order simulation, the boundary between reality and representation blurs. Susan Sontag (1977) places photography in this category. She asserts that most viewers of photographs believe they are seeing the subject itself, and do not recognise that it is merely an image of this object. For the third order simulation, Baudrillard adopted the archaic word simulacrum, to express a situation where lines between real and fake are totally blurred. A perception of “hyperreality” can occur under these conditions. Hyperreality is a state in which the representation seems more real than the reality it is supposed to represent. The state is so enticing that individuals often prefer the hyperreal representation to actual reality.

Gilmore and Pine (2007) took a managerial and applied approach to show the effects of evaluator and context on judgments of authenticity. Disneyland is a key example in their book, described as fake-real: not what it purports to be, but true to itself in a philosophical sense. While Baudrillard views Disneyland as totally fake (though seemingly very real), Gilmore and Pine see Disneyland as gloriously fake, but exactly what it wants to be. Their analysis shows that statements about authenticity are malleable, and can be contentious.

The table below reviews a range of studies which consider semiotic approaches to authenticity, with a brief overview of their context and focus, contributions and limitations.
<table>
<thead>
<tr>
<th>Author</th>
<th>Context and Focus</th>
<th>Contributions</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baudrillard 1983</td>
<td>Semiotics, commercial iconography</td>
<td>Suggested three orders of simulation: first order-clearly artificial representation of something real (map); second-order blurs representation and reality (photo); third order or simulacrum-no distinction between real and fake. Hyperreality is a mental state in which representation seems more real than reality.</td>
<td>Very applicable to entertainment-related industries, but little empirical support in a highly politicised tone.</td>
</tr>
<tr>
<td>Fernandez and Lastovicka 2011</td>
<td>Marketing and semiotics, contemporary electric guitars</td>
<td>Indexical authenticity is amplified by contact with a revered guitarist, converting a mass-produced instrument into a relic or fetish. The object can enhance the authenticity of the owner.</td>
<td>Research was conducted with an unusual class of emotionally-involving objects in a context of strong celebrity meaning transfer.</td>
</tr>
<tr>
<td>Grayson and Martinec 2004</td>
<td>Marketing and semiotics, historical sites</td>
<td>Considers semiotic concepts of iconicity and indexicality; both constructs are demonstrable in practice. A sign representing reality elicits a similar state to the reality itself.</td>
<td>Operationalised authenticity as a dichotomous variable.</td>
</tr>
<tr>
<td>Grayson and Shulman 2000</td>
<td>Marketing and semiotics, irreplaceable possessions</td>
<td>Possessions form an indexical semiotic linkage with memories, allowing verification of previous experience.</td>
<td>Good empirical support, but limited to irreplaceable possessions, and hence not broadly applicable to mass-produced items.</td>
</tr>
<tr>
<td>Hede and Thyne 2010</td>
<td>Marketing, authentic and replica artefacts</td>
<td>Indexical and iconic authenticities are symbiotic and help consumers experience existential authenticity. The inauthentic can create dissonance, and self-authenticity appears to be operant in consumption situations.</td>
<td>Based on one case study, and use of a famous individual as stimulus may have biased results.</td>
</tr>
</tbody>
</table>

Table 2.9: Semiotic Approaches to Authenticity
### Table 2.9 (continued): Semiotic Approaches to Authenticity

<table>
<thead>
<tr>
<th>Author</th>
<th>Context and Focus</th>
<th>Contributions</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jones 2010</td>
<td>Cultural studies and archaeology, historic monuments</td>
<td>Neither materialist nor constructivist perspectives on authenticity explain why it is so compelling, or how it is experienced. Contends that authenticity is underpinned by the relationships between people and things, leading to the almost magical power of authenticity.</td>
<td>Applicable to emotive and high-involvement contexts only.</td>
</tr>
<tr>
<td>Russell, Norman, and Heckler 2004</td>
<td>Marketing, television programming</td>
<td>Involved viewers find it difficult to separate television reality from external reality. Viewers may model and imitate behaviours from the show, including consumption behaviours.</td>
<td>Translates directly to other entertainment media, but may not generalize further.</td>
</tr>
</tbody>
</table>

### 2.12. Branding and Strategy

Personal authenticity is an important construct in the leadership and management literatures, but there is less work which directly considers authenticity and branding or corporate strategy context. To date in this area suggests that authenticity is important for brands, advertising, public relations. However, this literature is not yet fully developed and further work remains to be done.

The table below reviews four studies which consider different aspects of branding and strategy, with a brief overview of study context and focus, contributions and limitations.
<table>
<thead>
<tr>
<th>Author</th>
<th>Context and Focus</th>
<th>Contributions</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anderberg and Morris 2006</td>
<td>Marketing and advertising</td>
<td>Building authenticity and trust is critical for brands.</td>
<td>No empirical support.</td>
</tr>
<tr>
<td>Middlemiss 2003</td>
<td>Marketing and brand management, corporate social responsibility</td>
<td>Some corporate social responsibility programs can enhance brand image if appropriate and authentic.</td>
<td>Little theoretical guidance on determining appropriateness and authenticity of CSR programs.</td>
</tr>
<tr>
<td>Jackall and Hirota 2000</td>
<td>Advertising and public relations, celebrity endorsers</td>
<td>Endorsers may be diminished and seem less authentic when associated with mass-market goods.</td>
<td>Considers authenticity of the endorsed product, but is less clear on the effects on the endorser.</td>
</tr>
<tr>
<td>Liedtka 2006</td>
<td>Business ethics and strategy, organizational identity</td>
<td>Strategic intent defines the self which and organization aspires to be, and provides guidance in making the corporate self more authentic.</td>
<td>Applicable only at the organizational or group level.</td>
</tr>
</tbody>
</table>

Table 2.10: Branding, Strategy, and Authenticity

2.13. Gaps in the literature and opportunities for research

Authenticity has not been definitively conceptualised in the marketing literature, even though there is considerable research in many other fields. The preponderance of prior work on authenticity in marketing and consumer research has been qualitative and interpretive, which is appropriate because authenticity is fundamentally a perception and a judgement made by an individual in a particular context. This prior interpretive research (e.g. Beverland and Farrelly 2010; Brown et al. 2003) illuminates the richness and complexity of processes which create these perceptions and judgments.

2.13.1. Measuring Authenticity

However, there remains a need to utilise additional research approaches when investigating authenticity. Quantitative research on authenticity, in particular, is in its early stages. When Grayson and Martinec (2004) investigated authenticity, they asked respondents to identify authentic or inauthentic tourism attractions. This
effectively treated authenticity as a dichotomous categorical variable. If their study is considered in conjunction with the body of interpretive research on authenticity, it indicates a clear gap in the literature. Interpretive research shows that authenticity is complex, nuanced, and multi-faceted, but quantitative research to date has operationalised it as a black or white, present or absent phenomenon.

Operationalising authenticity as a categorical variable has prevented the field from taking the next logical step: creating more nuanced measures of this construct. Such measures are critically important if marketers are to systematically and successfully influence consumers’ perceptions of authenticity, and measure their effectiveness in doing so. A measure of authenticity is needed to experimentally assess and compare the effectiveness of multiple cues. For example, the review of authenticity just presented has revealed that old objects can be seen as more authentic (Arnould and Price 2000; Brown, Kozinets and Sherry 2003; Peñaloza 2000) or less authentic (Goulding 2000). However, without access to a nuanced measure of authenticity, researchers have only a limited ability to assess the influence of perceived object age on judgements of authenticity.

Extrapolating from the research to date, it does appear that authenticity is a continuous construct which could and should be measured at least at an interval level. Measures of authenticity which are more nuanced would open the possibilities of different analytical approaches, thereby enabling researchers to manipulate and examine the antecedents and outcomes of authenticity. Consequently, as explained in Chapter One, one of the key objectives of this research is to construct and demonstrate the use of an interval scale to measure perceived authenticity

2.13.2. Understanding antecedents of authenticity

A great deal is known, across many fields, about the antecedents of perceived authenticity. However, much of the insight gleaned from this work appears to be context-specific. Far less is known about more general antecedents of perceived authenticity which could operate across multiple contexts, or about the perceptual and attitudinal outcomes created by perceived authenticity. In particular,
authenticity is an important issue for branding, but there is little work which explores this interaction. Research that provides generalisable findings regarding how perceptions of authenticity can be influenced is greatly needed.

Marketers who choose to create or enhance perceptions of authenticity have few points of reference. At present, there is no established way to evaluate the success of efforts to manipulate authenticity, or to compare the effectiveness of different product or advertising cues. Until better measures and methods are developed, understanding managerial outcomes of authenticity appeals will be limited.

An additional difficulty comes in translating authenticity, which derives from the philosophical and psychological traditions, into a consumer culture concept. Authenticity translates easily into contexts in which the authenticity of an individual is being considered, such as authenticating acts (Arnould and Price 2000). However, less is known about the authenticity of products, objects, and experiences, and how individuals react to these. It is inherently difficult to take a construct which was developed to explain human characteristics (such as personal or philosophical authenticity) and apply that construct to non-human objects and experiences. A similar issue has been seen in the brand personality literature (e.g. Aaker 1997), in which human personality characteristics do not translate directly to non-human brands. More work is needed in this area.

2.14. Conclusion

Authenticity has a rich intellectual history. It has been explored in a range of disciplines for centuries, and remains of central importance and interest today. Many of the key issues surrounding authenticity will remain contentious for many years. Nonetheless, it is easy to conclude that this construct is of great importance to both researchers and ordinary individuals.

The authenticity concept is appealing to both marketers and their customers. However, a large body of work highlights the fact that authenticity is difficult to define, and even more difficult for individuals to assess. Authenticity appeals can
potentially be used in a way which achieves marketing goals, and also assists customers to co-create important personal meaning through their consumption activities. This appears to be a worthy goal, but it requires making the authenticity construct more apparent and accessible. The next chapter will review the research into certification, which may offer a way to make authenticity more credible and salient to potential customers. Consequently, as conveyed in Chapter One, this research will examine two antecedents of perceived authenticity that have the potential to be relatively context-free. The first such antecedent is perceived age, which was discussed earlier in this chapter. The second antecedent is certification, which will be discussed in Chapter Three.
Chapter 3. Certification Literature Review
and Theory Development

3.1. Definition and benefits of certification

Prior research has not provided a consistent definition of certification. Hence, for the purposes of this research, certification is defined as the provision of extrinsic information about the quality or properties of a product or service. This information can be verbal, numerical, or graphical. Certification is often, but not always, provided by a third party. Information which is conveyed or can be ascertained directly from the properties of the product or service itself (neither verbal, numerical, nor graphical) is specifically excluded.

Making appropriate information available to potential customers offers the benefit of reducing search costs in decision-making contexts (Stigler 1961). Certification does assist in the provision of information, and therefore can reduce search costs. This should increase consumer welfare and economic efficiency, as well as offer competitive advantages to the certified brand.

3.1.1. Definitions: brand, certifier, and certification brand

The terminology in this research uses four related terms: brand, certifier, certification brand, and certified brand. Certification (a process) combines a product or service brand with a certification brand to create a modified entity (the certified brand). The term brand is used to refer to a product or service brand. Brand is defined in a way consistent with prior research, and is discussed further in Section 3.5. A certifier is the organisation or group which evaluates products or services, and judges that the evaluated offering is worthy of certification. A certification brand is the public-facing presence of the certifier. The certification brand is combination of name and symbol which is affixed to the certified offering, generally another branded product or service. The combination of the brand and the certification brand is a certified brand. The certified brand is a special case of co-branding.
A certification brand is a specialised type of brand. It typically has a name, a symbol, and some level of brand awareness and associations. Typically certification brands do not sell products or services to end users (though they often sell certification services to manufacturers or service providers). Certification brands are almost always used as a co-brand, attached to a product or service which is sold to an end user. Certification brands are developed to modify other products, and their business model is usually based on fees charged to the brands they certify. The difference in knowledge structures between typical brands and certification brands is discussed in detail beginning in section 3.5.2.

3.1.2. Types of certification

Few formal schemas for certification approaches have been proposed. Based on a review of the literature and observation of certification schemes in the marketplace, it is clear that many overlapping forms of certification schemes exist, both voluntary and mandatory. All of the readily-apparent categories have an industry or certification-centric view, because these aspects of certification are visible and can be reliably assessed.

An initial approach to a taxonomy has been developed which classifies certification schemes in two different ways, either by the source of the certification (the certifying body), or by the function which the certification serves. An example of this taxonomy is presented in the table below:
Certification approaches classified by source of certification

<table>
<thead>
<tr>
<th>Administered by an objective third party:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Branded government-sponsored systems (toi iho™, sponsored by Creative New Zealand, Energy Star)</td>
</tr>
<tr>
<td>Non-branded government certifications (wine classifications, food quality—premium, prime, Grade A)</td>
</tr>
<tr>
<td>Objective industry-sponsored systems (ISO 9002)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Administered by a non-objective party:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade organisation sponsored-systems (Master Painter, Master Builder)</td>
</tr>
<tr>
<td>Private for-profit certification systems (Green Point, Demeter biodynamic organics)</td>
</tr>
<tr>
<td>Commercial certification (Windows Vista compatible software)</td>
</tr>
<tr>
<td>Quasi-certified: specific claims backed by manufacturer’s own reputation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Administered by parties with varying objectivity:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Third-party certified: specific claims backed by a unidimensional certification brand</td>
</tr>
<tr>
<td>(Fairtrade, Qualmark)</td>
</tr>
<tr>
<td>Cobranded certified: specific claims backed by another well-developed brand with multidimensional</td>
</tr>
<tr>
<td>brand equity (Weight Watchers certification of selected McDonald’s menu items)</td>
</tr>
</tbody>
</table>

Certification approaches classified by function of certification

| Systems indicating additional external benefits (Grun Punkt, LEV (low emission vehicle),               |
| most environmental certifications)                                                                   |
| Ingredient certification (branded ingredients, Intel Inside)                                         |
| Certification-like programmes which add information (mandatory nutritional content labelling)         |
| Tamper-proof packaging (intactness certifies product is unopened)                                    |

Table 3-1: Certification approaches

Many of these types of certifications have been individually explored in existing research. However, further opportunities to examine how certification actually functions for customers exist. For example, classification of consumer perceptions of various approaches to, and/or types of certifications could be very useful. Such a schema would also have to deal with the fact that some certifications may overlap in practice – for example certifying a bottle of wine as “Champagne” indicates both that it is a type of wine, and that it comes from a particular location.
3.1.3. Motivations of certified organisations

Certification is one form of communication used by manufacturers to convey claim-like information to potential customers. Manufacturers use certification to reduce perceptions of risk and to improve positive perceptions of a particular brand in order to influence customer decisions. Certification is also used to compensate for perceived deficits in the brand image of the certified brand. But certification is a dyadic process which entails a broader set of considerations: it requires organisations which certify as well as those which are certified. The interests of certifying and certified organisations are substantially different.

3.1.4. Motivations of certifying organisations

The relationship between certifier and certified is symbiotic: both sides benefit from the relationship. The focus of this research is the effects of certification on the perception of certified objects, but it is useful to briefly understand the context in which certifying organisations operate.

For many certifiers, provision of the certification is a key source of revenue or even the raison d’être for the organisation. Other key motivators can be the general improvement of business practice (ISO 9001), influencing manufacturers to improve their offerings (Energy Star efficiency ratings, car crash test results), improving consumer satisfaction (Qualmark hotel ratings) or social and ethical concerns (Fairtrade). Sometimes certification is developed as a new cobrand (Michelin restaurant ratings, MobilGuide) to expand and enhance the image of an existing brand (Michelin tires, Mobil petrol).

Space precludes an in-depth exploration of the perspective of the certifying organisation. However, it is useful to recognise that there is a tension between the objectives and interests of the certifier, and those of the certified. The motivation of certified and certifying brands may also be also relevant to individuals’ perception of certifier source credibility and legitimacy, which is discussed below.
3.1.5. When invalid certification procedures are exposed

The entire value of certification depends upon a valid, transparent, and repeatable certification process. If, however, certification procedures are known to be untrustworthy, the entire value of certification can be lost. China has a well-known problem with counterfeit goods, and some trade associations are attempting to address this. The Yangcheng Lake Area Crab Association produces highly prized and very expensive crabs as a local delicacy. However, the volume of crabs from other areas being illicitly marketed as Yangcheng crabs is estimated to be as much as 10 times the volume of the genuine crabs (National Public Radio, 2011).

The local crab Association has developed a nylon authenticity tag to be attached to every authentic crab. Each tag has an individual serial number and a phone hotline number so customers can check the genuineness of their crab. However, many Yangcheng crab farmers are provided with surplus tags, and commonly sell them to crab farmers from other locales. In addition, counterfeit tags are freely and cheaply available. Thus, the authenticity tag no longer fulfils its only purpose, guaranteeing the source of the labelled crabs. As more consumers become aware of the security problems with this authenticity program, its value steadily reduces.

3.2. The effects of certification: a review of the literature

The earliest academic research on certification appears to be by Parkinson (1975). This quasi-experimental work looked at pre-existing certification programs, and found generally high levels of consumer awareness of the programs. Parkinson treated certification as an information source and found it rated highest in expertise and impartiality when compared to recommendations from a friend, a salesman, or an advertisement. Certification ranked second in trustworthiness, behind a friend's recommendation but ahead of salesman or advertisements. In terms of purchase choice, certified products in four categories (appliances, state, laundry detergent, and clothing) were overwhelmingly preferred to uncertified products, or those certified with a fictitious seal. Thus, this study established certification can be an
important information source, and that it can have a significant impact on purchase behaviour.

Certification is a costly and labour-intensive process. The certifying organisation must set standards, procedures, and systems in place to create a credible and reliable endorsement (Jahn, Schramm, and Spiller 2005). The organisation being certified incurs the costs of the certification procedure, may need to make changes to its product or procedures, may be required to pay a licensing fee, and must comply with specific terms and conditions from the certifier.

Certification is usually voluntary, and most certifications are used to make or imply claims about the certified product. However, most of these claims could be made in a very similar way without incurring the trouble and expense of certification. Why, then, do organisations invest substantial resources in certification? The widespread use of certification implies that certifying organisations perceive benefits which exceed the costs. Considerable research supports this intuition, and indicates substantial benefits for certified organisations.
Across a broad range of product categories, certification was found to improve customers’ perception of certified products, increase purchase intention, and support premium pricing. Key findings are summarised in Table 3-2 below:

<table>
<thead>
<tr>
<th>Author</th>
<th>Context</th>
<th>Key Findings</th>
<th>Estimated Price Premium from Certification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aguilar and Vlosky (2008)</td>
<td>Sustainable wood products</td>
<td>Homebuilders and architects are significantly more willing to purchase based on factors underlying certification (sustainability and rigorous procedures), but not based on certification per se</td>
<td>None (certification was not a significant contributor to willingness to purchase)</td>
</tr>
<tr>
<td>Anderson and Hansen (2004)</td>
<td>Wooden CD racks</td>
<td>Strong preference for certified wood origin over non-certified wood; significant differences in the importance of the wood origin attribute by segment.</td>
<td>Not measured</td>
</tr>
<tr>
<td>Botonaki et al. (2006)</td>
<td>Fruits and vegetables</td>
<td>Significant stated willingness to pay for organic certification or general quality certification</td>
<td>Not measured</td>
</tr>
<tr>
<td>Cavanaugh (2010)</td>
<td>Forensic scientists and laboratories</td>
<td>Certified individuals and accredited labs have higher credibility with judges</td>
<td>Not measured</td>
</tr>
<tr>
<td>Christensen (2003)</td>
<td>Beef products</td>
<td>Respondents in US and UK rated government certified products, and meats labelled organic, more highly than typical branded meats</td>
<td>Not measured</td>
</tr>
<tr>
<td>Fotopoulos and Krystallis (2003)</td>
<td>Apples certified from a region of origin</td>
<td>Certification of regional origin is viewed positively, and adds value over and above regional origin alone</td>
<td>+6% for certification of origin in addition to a +33% premium for regional origin per se</td>
</tr>
<tr>
<td>Kruger (2010)</td>
<td>Printer paper</td>
<td>Strong preference for environmentally certified paper; insignificant differences between government and private certifiers.</td>
<td>+33% to +41% premium over uncertified paper</td>
</tr>
<tr>
<td>MacKerron et al. (2009)</td>
<td>Carbon offset certification for jet travel</td>
<td>Willingness to pay £24 additional on a transatlantic airfare for a voluntary carbon offset contribution, but certification was not significant</td>
<td>None (certification was not a significant contributor to willingness to pay)</td>
</tr>
<tr>
<td>Masters and Sanogo (2002)</td>
<td>Infant foods in a developing country</td>
<td>Consumers are willing to pay a large premium for convenience, and an additional premium for certification of nutritional value</td>
<td>+65% for certification</td>
</tr>
<tr>
<td>Nelson et al. (2001)</td>
<td>Academy Awards for cinema</td>
<td>Nominations and awards increase market share, revenues, longevity</td>
<td>Earnings for best picture nomination +8% to +54%; earnings for best picture award 0% to +67%</td>
</tr>
</tbody>
</table>

Table 3-2: Research findings on certification
<table>
<thead>
<tr>
<th>Author</th>
<th>Context</th>
<th>Key Findings</th>
<th>Estimated Price Premium from Certification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nilsson (2005)</td>
<td>Pork chops</td>
<td>Significant willingness to pay for certification which differs by consumer segment. Additional certifications increase perceived value</td>
<td>Versus environmental certification only: animal welfare +13%, antibiotic free +68%, environment &amp; welfare +184%, welfare &amp; antibiotic +240%, environment &amp; welfare &amp; antibiotic +436%</td>
</tr>
<tr>
<td>Parkinson (1975)</td>
<td>Appliances, steak, laundry detergent, clothing</td>
<td>High awareness of existing certification programmes; certification has greater expertise and trustworthiness than friends, salesmen, or advertisements</td>
<td>Not measured</td>
</tr>
<tr>
<td>Priilaid et al (2009)</td>
<td>Expert rating for wines</td>
<td>Expert ratings shown to respondents have far stronger effects on ratings of wine quality than the inherent quality of the wine as measured in a blind tasting</td>
<td>Not measured</td>
</tr>
<tr>
<td>Radas, Teisl, and Roe (2008)</td>
<td>Genetically modified foods</td>
<td>Strong preference for certification by government departments; significant differences of preferred certifiers between different consumer segments</td>
<td>Not measured</td>
</tr>
<tr>
<td>Revilla and Dodd (2003)</td>
<td>Talavera pottery</td>
<td>Tradition and certification are the second factor in perceptions of authenticity, accounting for 13.2% of variance</td>
<td>Not measured</td>
</tr>
<tr>
<td>Rios et al. (2006)</td>
<td>Washing powder with environmental attributes</td>
<td>Environmental certification positively affects attitudes towards the brand and increases respondents’ confidence in their own assessments of brand environmental performance</td>
<td>Not measured</td>
</tr>
<tr>
<td>Romanowska (2009)</td>
<td>Eggs</td>
<td>Consumers prefer certified eggs; government is generally the preferred certifier</td>
<td>Pasteurised eggs: industry certified +32% and government certified +70% over farmer certified.</td>
</tr>
<tr>
<td>Rozan, Stegner, and Willinger (2004)</td>
<td>Apples, potatoes, and bread</td>
<td>Strong preference for food certified free of heavy metals</td>
<td>Apples +129%, potatoes +115%, bread +182%</td>
</tr>
<tr>
<td>Teisl, Radas and Roe (2008)</td>
<td>Genetically modified foods</td>
<td>Different consumer segments react differently to varied types of certification</td>
<td>Not measured</td>
</tr>
<tr>
<td>Vakhitova (2006)</td>
<td>Microsoft certified computer professionals</td>
<td>Significantly higher earnings for certified workers</td>
<td>+27 % to +33%, dropping to +2% to +10% when controlled for occupation</td>
</tr>
<tr>
<td>Wohl (1995)</td>
<td>Apples</td>
<td>Significant preference for apples certified free of pesticide residues</td>
<td>+32%</td>
</tr>
</tbody>
</table>

Table 3-2 (continued): Research findings on certification
3.3. Types of information: the economics of information

The motivations and interests of the stakeholders in certification are relatively straightforward, but the actual certification process can be more complex. Information of varying types needs to be communicated, and there are different forms of certification which can be affixed. It is useful to consider different types of information, and later a range of certification approaches, to understand how these interact.

A durable schema was developed in the economics of information literature with the delineation of “search qualities” and “experience qualities” (Nelson 1970), and completed with the addition of “credence” attributes (Darby and Karni 1973). These properties were considered to be attributes of tangible goods, although Nelson (1970) also expanded them to delineate entire classes of products as search or experience products. The same schema has also been applied to services (Parasuraman, Zeithaml, and Berry 1985) and found to be empirically valid. Jahn, and Schramm, and Spiller (2005) and Fotopoulos and Krystallis (2003) have also applied these categories to certification processes. Whether applied to products or services, the consumer apprehension of these three different types of attributes varies quite substantially.

3.3.1. Experience properties

Experience properties can sometimes be judged prior to purchase, and the judgement then used as input to the purchase decision. For products, consumers can often prejudge easily accessible experience attributes such as size, colour, scent, or design. It is more difficult to anticipate the experience aspects of a service encounter in advance. This is similar to other product-experience properties which can be determined only during trial or use, such as flavour, garment shrinkage, or durability. In these cases, the experience properties which are judged only after use will affect postpurchase satisfaction (or dissatisfaction) levels, but they obviously cannot affect the purchase decision.
Certification can be a partial solution to this issue. An experience property of a product (such as the taste of a wine) can be certified in a way that provides an appropriate cue about that property (a gold medal from a wine competition). The consumer may be unable to actually taste the wine before purchase, but they can use a credible indicator about the quality of the wine’s taste to assist their decision.

Certification does not, however, operate in a vacuum. There is a generalisable effect that while additional information has no physical effect on a product or service, it can sharply change the perceptions of the product or service to which it is attached (Kirmani and Rao 2000). Certification can signal experience properties, but it actually goes further and has framing effects. Priilaid et al (2009) found that high ratings for wines actually mediated perceptions of those wines' taste: a certified wine was found to taste significantly better than an otherwise identical non-certified wine. Certification can give consumers accurate information about experience properties, but it may also change the way those properties are perceived.

This is psychologically complex: objective third-party information, conveyed to an interested and motivated consumer, creates a non-objective response—a positive bias towards the certified object. This could be a "wolf in sheep's clothing" effect: an appropriately disguised claim is taken at face value. Consumers readily accept the third-party information, because normal defences such as scepticism or counterarguing are circumvented. In essence, a commercial claim is packaged in such a way that it avoids normal scrutiny. Further research is required to understand whether these effects are occurring, and if so, what is facilitating them.

3.3.2. Search properties

Search properties are the basis for purchase in many categories, and consumers actively seek information about these properties. Search attributes are generally accessible prior to purchase through specifically provided information. Non-certified examples could include the length of warranty, price, or brand name. Certification is used to make search properties more accessible, and information which is more easily accessible will be more fully used (Russo 1977). Some search properties can
relate to social or environmental outcomes, and in many cases certification of these properties is sponsored or mandated by governments. Government-sponsored examples include the Energy Star certification for low-power consumption (global), fuel$aver certification of fuel economy for cars (NZ), and savewater! labels detailing water consumption for consumer products (Australia). Similar programs can be sponsored by non-government organisations (NGOs), including some forms of nutritional labelling such as the Heart Foundation Tick (Australia and NZ) or the global Fairtrade mark for goods which are ethically produced and sold. Private organisations can also provide socially-relevant certification, such as the Green Tick™ sustainability programme (Harris 2007).

3.3.3. Credence properties

Credence properties are often critically important, but they cannot be reliably judged by consumers before purchase. In many cases, credence goods cannot be adequately judged even after purchase, and consumers must rely on non-product cues as indicators of quality. Examples of credence goods include organic foods, free range eggs, medical treatment, insurance policies, car repairs or legal services. For services, certification is often limited so that outcomes are not actually warranted. The certification procedures concentrate on the processes used or the qualifications of the individual service providers. Professional certifications generally refer to the qualifications of the service provider, with little or no reference to the quality of the service provided (admitted to the legal bar, Queen’s Counsel, Fellow of the Royal New Zealand College of General Practitioners).

3.3.4. Certification of different types of attributes

As demonstrated above, search, experience, and/or credence properties of either products or services can be certified. In practice, there are significant differences in whether, how and when certification is used. Because certification entails costs to the manufacturer, it is typically added to reinforce attributes which managers believe are important to their customers.
Often certification is used to provide or substantiate information which is not readily apparent. This is most relevant for credence properties, which are essentially invisible to and/or unverifiable by the ordinary consumer (e.g., "Bio-Gro organic," “Made in New Zealand”). The certification becomes an outward and visible sign of a property which would otherwise be ineffable.

Certification is most often used to highlight non-apparent attributes. Credence properties are commonly certified, as they are usually not directly observable. Attributes which can be easily seen or verified prior to purchase are, essentially, self-evident. Certifying such obvious properties would generally be either unnecessary or even counterproductive. Such over-certification might appear defensive on the part of the manufacturer, or incongruous enough to raise customer suspicions.

3.3.5. Pre-purchase considerations

However, many attributes of goods and services cannot be readily determined by potential customers prior to purchase. This situation can occur for search, experience, or credence attributes, and it creates difficulties for consumers in making well-informed and appropriate decisions. An ambiguous decision-making situation can create psychological discomfort, which can potentially result in a range of dysfunctional outcomes. These include protracted decision-making, greater customer anxiety, or a reduced level of purchases overall. Certification of properties which are less easily verified before purchase makes strategic sense, and will assist consumers in making a decision. It is likely that the brand which provides the best information in the best format can gain a competitive advantage.

In addition, any lack of needed information will make it difficult for consumers to find the product or service which is best suited to their pre-existing expectations. If information is inaccessible pre-purchase, it cannot help consumers make a better purchase decision. This suggests that some consumers may make purchase errors (buy a product not fully suited to their needs) because they cannot properly assess the product being considered. Negative post-purchase surprises can then result,
leading to reduced customer satisfaction, poor word-of-mouth, and high rates of product returns.

3.3.6. Certification of experiences

In some cases experience goods or services are certified (Qualmark ratings of tourist attractions) or reviewed by a credible source to similar effect (*Lonely Planet* travel guides). Under some circumstances, these entities with certification properties may act as gatekeepers. Travel guides, such as the *Lonely Planet* and *Frommer’s* series, provide both generic information and reviews of locales and establishments. Customers may decide, based on these recommendations, to either include or exclude a particular destination from their consideration or purchase sets. This has the potential to massively change purchase habits, as a town, region, or entire country could be included or excluded on an itinerary as a direct result of the extrinsic information provided by the travel guide.

3.4. Approaches to certification

Certification is generally perceived to be provision of extrinsic information by a third party, and is used to lend a halo of credibility or objectivity to the certified product or service. While this approach is common, it is only one of the options for certification. There is a spectrum of executional options for certification, and different certification approaches will result in differing ramifications for consumer perceptions and strategic considerations. This continuum of options runs from self-certification at one end, through unidimensional third-party certification, to full multidimensional cobranded certification at the other end.
Each particular certification example can arguably be placed along this continuum. An original schema detailing different approaches to certification is detailed in Table 3-3. Three discrete categories are shown. However, these categories are used as general prototypes placed along a continuous scale, and not specified as categorical variables.

<table>
<thead>
<tr>
<th>Certification approach</th>
<th>Non-certified</th>
<th>Certified</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Generic claims or puffery</td>
<td>Quasi-certified</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Third-party certified</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cobranded certified</td>
</tr>
<tr>
<td>Nature of claim</td>
<td>Nonspecific, less verifiable</td>
<td>Specific and verifiable</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Specific and verifiable</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Specific and verifiable</td>
</tr>
<tr>
<td>Source of claim credibility</td>
<td>Brand or manufacturer</td>
<td>Brand or manufacturer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Third-party certifier</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Full brand equity of cobranded certifier</td>
</tr>
<tr>
<td>Nature of warranty</td>
<td>Implied warranty or none</td>
<td>Express warranty</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Express warranty</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Express warranty</td>
</tr>
</tbody>
</table>

Table 3-3: Approaches to Certification

3.4.1. Quasi-certification

One end of the certification spectrum is the quasi-certification of claims by the producer. In cases of quasi-certification, the producer makes an explicit claim about the properties or performance of its offering, and implicitly uses the reputations of the brand and manufacturer as backing for that claim. The manufacturer is effectively using its own reputation as an assurance that the claims are true.

While this is functionally equivalent to any other claim made by a producer, it has a different resonance. Quasi-certification is an explicit promise that a product or service will perform in a highly-specified manner. This, in turn, may create a different legal meaning in the form of an "express warranty," which is discussed below. One particular domain for quasi-certification is the credence-related issue of compatibility with other systems or products. Examples would include a manufacturer's claim that a leather case would correctly fit a 6th generation iPod classic, or that a software package would be compatible with a particular computer operating system.
Sometimes a company can create brand equity related to its quasi-certification. Jared Fogle was an unknown individual who had lost a substantial amount of weight on his own self-styled Subway sandwich diet. Based on his success, the chain used him as a spokesperson for the Subway brand beginning in 2000. Subway leveraged Jared’s success as a way to quasi-certify the healthiness of their products, a classic example of meaning transfer from an endorser to a brand (McCracken 1989). In a reflexive fashion, there was also meaning transfer from the Subway brand back to the endorser. Jared Fogle became a celebrity as a result of the more than 50 commercials he completed for the chain. His personal success at weight loss lent credibility to Subway’s self-certified claims of healthiness, and Subway’s heavy advertising and international brand awareness lent celebrity to him.

3.4.2. Third-party certification

Third-party certification is the most prototypical approach to certification, and is a limited form of cobranding. In this form, an explicit promise that a product or service will perform in a highly-specified manner is either made by, or attested to, by a third-party endorser. While the substance of the claim may be identical to one made in a self-certification context, the reason for adding a third-party endorser is to build additional credibility and positive affect through a process of meaning transfer (McCracken 1986, 1989).

Third-party certification brands have two distinct functions. As freestanding brands in their own right, each can develop its own brand image to advance the purpose and business of the certifier. These brands are symbols for a business organisation with explicit procedures, and a set of brand image attributes. However, a high level of knowledge about the certifier will be salient only to individuals who are interested in the purpose underlying the certification. Few of these business attributes (if any) are known by the target consumer.
Third-party certification brands are often used in a way which falls short of full-fledged cobranding, because they are not lending their full and detailed brand equity to another brand. Rather, they are executed simply as a unidimensional claim which is backed by a third party endorsement. For example, most travellers in New Zealand know little or nothing about Qualmark certification standards, or about the brand itself. Nonetheless, travellers can readily understand the star rating concept, and can readily interpret the quality level implied by a particular Qualmark rating. An endorsement from a certifier can make a claim more credible, but there may be little direct image and affect transfer from the certification brand.

When used to certify another brand, certification brands serve as a simple tag and third-party affirmation that a particular attribute (or set of attributes) exists in the certified brand. The purpose of the certification brand is to modify and improve the host brand which it certifies, often by adding an absent attribute. This may be an attribute that is difficult or impossible for the certified brand to build on its own. Examples are numerous: organic claims certified by Demeter or Bio-Gro, sustainability claims for wood products accompanied by the Forest Stewardship Council (FSC) name and logo, lodging facilities carrying a Qualmark quality rating, or energy-saving appliances carrying the global Energy Star certification.

In each of the examples cited above, the meaning of the certification brand to consumers is limited to a single dimension. The Apple "Made for iPod" certification has one simple meaning: it guarantees the compatibility of the certified non-Apple product with the purchaser's Apple-brand iPod. Typically these third-party certifications bring little brand equity of their own to the certified product, but they allow certified brands to make more emphatic and credible claims which are supported by a third party.
3.4.2.1. Transfer of meaning from a low-meaning certifier

Third party certifier brands often have little brand awareness of their own, and may gain image benefits through association with a major brand. Although it might appear that a certification claim by a little-known certifier would be of limited utility, as it has little meaning to transfer (McCracken, 1989), benefits do occur. These benefits begin with the simple addition of claim-like information to the certified product. This can arouse interest and provide utility to customers. In addition to the utility of the claim itself, customers may attribute some halo of expertise and credibility to the certifier, even if it is unfamiliar to them. An unknown certifier can achieve some level of source credibility simply by being a credible-looking outside entity. Sometimes the certification by an unknown party can create its own meaning, as in the Subway-Jared Fogle example detailed above.

An alternate explanation is also plausible. There is a body of work around the concept of the "mere exposure hypothesis" (Zajonc 1968) that simply exposing an individual to a stimulus will enhance his attitude towards the stimulus. It is certainly the case that a potential purchaser would be exposed to the third party endorsement claim through product packaging or advertising. This mere exposure would be likely to improve the attitude of the potential purchaser towards both the certified object and the certifying body.

An inverse transfer of meaning can also occur in this process, where the association of a major multinational brand with a little-known certifier (Jared Fogle for Subway sandwiches or Rainforest Alliance for McDonald’s McCafé) can create greater awareness and a positive image for the certifier. This may, in turn, lend greater weight to the certification, which transfers back to the certified brand.
3.4.2.2. Consumer attributions regarding third-party certification

Parkinson (1975) conducted a quasi-experiment involving a mix of pre-existing certification brands, fictitious certification brands, and control groups with no certification. Parkinson argued there is a significant difference between the standards used by third-party certifiers (which are presumably unbiased) and those used for "commercial" certifications conducted by manufacturers or retailers themselves (which may be biased). Respondents did prefer the third-party certified products. However, they appeared to ignore or not understand the differences in certification standards, and also lent significant weight to the less objective commercial certifications. Parkinson argued this could lead to a consumer welfare problem, because purchasers rely on information which is actually less objective than they think. This is a legitimate concern, although it would be very difficult to regulate in a practical way.

Parkinson found that consumers overwhelmingly chose certified products over those that were either not certified, or certified with a fictitious mark. He also found that products with third-party certifications were significantly preferred over those with commercial certifiers, but these findings are less robust. There appears to be a double jeopardy effect, with the preferred third-party certifications coming from high awareness certifiers, with the less-preferred commercial certifications coming from lower awareness certifiers.

Furthermore, two of the four third-party certifications in the study (Good Housekeeping Seal of Approval and Parents' Magazine) are captive programs offered to advertisers in the certifiers' magazines. The objectivity of these programs is questionable, and results are mixed: one rates higher in preference, and the other lower, than the presumably more objective third party certifiers (Underwriter’s Laboratory and U.S. Department of Agriculture). Thus, it is difficult to fully understand the differences between "objective" third-party certifiers and commercial certifiers from this study.
For the current research, no distinction is made between objective and non-objective certifiers. This is for the simple reason that most (if not all) certifiers, including government-supported certifiers, are potentially biased. Hence, the schema here focuses on the source of the certification (which is easily and reliably judged), but not on the objectivity of the certification (which is difficult or impossible to assess).

### 3.4.3. Cobranded Certification

Cobranded certification is a step beyond simple unidimensional support for a claim. In these instances, a third-party certifier is used to support a claim, but it is a full cobranding process, whereby the third party brings significant multidimensional brand equity. This interacts with the multidimensional brand equity of the certified product or service, creating a “brand alliance” (Rao and Ruekert 1994) and sending signals about the quality of the certified brand. A high level of image transfer is generally expected and promoted. The brand alliance can also function as a signal of quality which cannot be directly observed by a potential purchaser (Rao, Qu, and Ruekert 1999).

The most complex form of certification occurs in this explicit cobranding context. Examples would include McDonald's use of the Weight Watchers brand in conjunction with some of its entrées. McDonald's certification goes beyond a simple unidimensional claim (such as low calorie or low-fat) by implying that their food can be part of a weight-loss diet, and therefore a feasible and attractive alternative for Weight Watchers members.

Existing branding theory works well for this form of cobranding certification. Aaker (1996) uses the term “endorsement” to refer to the combination of two different brands. Aaker and Joachimstaler (2000) suggest three basic strategies for endorsement: a strong endorsement (e.g., Obsession by Calvin Klein), a linked name (e.g., McMuffin), or a token endorsement (Universal Pictures, openly owned by Sony, but the brand names are not used together). There is an unequal relationship between the endorsed brand (more prominent) and the endorsing brand (less
prominent) in all three of these strategies. All are forms of co-branding, but the brands are not on equal footing. In every case, the endorsing brand is in a somewhat subservient role, and is used to modify or amplify the meaning of the endorsed brand. Some benefits may accrue to the endorsing brand, but the primary benefits are reaped by the endorsed brand.

Fully co-branded certification is a process of transfer of meaning between two brands, similar to that which occurs in the process of celebrity endorsement (McCracken, 1989) or brand extensions (Aaker and Keller 1990). The extent and nature of the meaning transfer will be unique in each co-branding situation, as a direct result of the differing nature, strength, and compatibility of brand knowledge structures for each of the partner brands. It is likely that the interaction of two brand equities will facilitate perceptions in some ways, and inhibit them in others, but this has not been studies in any depth.

A credible certifying co-brand has been found to increase perceived quality (Patarapongsant 2008). However, as with brand extensions, the question of fit in the co-branding alliance is important. Positive consistency between the certified brand, certifying brand, and pricing signals produces the strongest effect on consumer perceptions, and inconsistencies dilute that effect (Miyazaki et al. 2005, Patarapongsant 2008).

In many cases, there will be a substantial difference in individuals' familiarity with the endorsed brand (typically higher) and the endorsing brand (often lower). Sometimes, however, the opposite is true and it can have a dramatic effect on a business. This is been seen in the New Zealand wine industry where little-known wineries received prestigious prizes and extremely favourable reviews. In the cases of the Stony Ridge and Kumeu River vineyards, international acclaim has led to greater brand awareness, stronger brand equity, increased distribution, and higher prices.
3.5. The function of brands: similarities to certification

Branding is commonly acknowledged to have existed for centuries, serving as a means to differentiate products from different sellers (Keller 1998). Berthon, Hulbert, and Pitt (1999) describe a brand as a "symbol around which a relationship is built" (p. 54) which offers specific functions for both buyers and sellers. They suggest three distinct functions which a brand can serve for buyers: easing identification, which reduces search costs; assuring quality, which cuts perceived risk; and building status and prestige, which moderates psychological risk. Brodie et al. (2006) state that service brands "facilitate and mediate the marketing processes used to realise the experiences that drive co-creation of value" (p. 106). Certification has significant similarity to some of these roles for brands. A certification can assure quality and build status, help in the co-creation of value, and (to a lesser extent) assist in identification. Thus, the functions of certification overlap substantially with the actual functions of the brand.

These definitions of branding raise some issues as to the locus of the brand itself. Arguably, the brand is actually a psychological construct which exists in individuals’ minds. Traditionally, however, a brand is seen as a product or service which uses the brand name as an extrinsic cue. It appears likely, however, that the brand name is only a fully extrinsic cue for a new product or service with a newly-affixed brand. Once a brand name is known and integrated with an offering, it cannot be removed without disrupting the perceptions it mediates and moderates. It is logical to assume that virtually any brand with positive equity will strengthen favourable perceptions, and increase the perceived value of a product, when compared to an otherwise identical unbranded product. Given these conditions, brand name, logo, and other relevant aspects of brand identity will be considered here as intrinsic (or endogenous) attributes.
If a consumer links a brand name to a perception of quality, then the brand name inherently takes on some certification properties for that consumer. To the extent that certification is perceived, salient, and remembered, it should add an additional node to the knowledge structure of the brand, thereby increasing brand equity.

Assuming that a brand does have certification properties, these can be maximised (perceptually and financially) by extending them to additional opportunities via cobranding or line extending. Wernerfelt (1988, p. 459) makes this an explicit assumption of a simple economic model, suggesting a firm can “… use umbrella branding to send a noise-free credible signal about the quality of a new product,” thereby effectively posting a bond which affirms the quality of the new product. The extended brand itself is, implicitly, a certifier. He goes on to suggest, based on model outputs, that there may exist “reputational economies of scope” and “… that a reputation from one market can be valuable (used or leased) in another …” (Wernerfelt 1988, p. 463).

Some existing brands, when used on particular line extensions, develop new certification-like properties. The Cancer Society in New Zealand, a provider of information and services, also sells Cancer Society brand sunscreen. This product raises funds and reinforces the organisation’s sun-safety message. At the same time, the Cancer Society name implies that the sunscreen is at least as safe and effective as competing products, and perhaps superior. The brand itself functions in the same way that a Cancer Society endorsement (certification) would if used upon a different brand.
3.5.1. How brands and certification differ: complex knowledge structures

Well-developed brands are often associated with complex multidimensional knowledge structures. A number of different schemas for these knowledge structures have been proposed, but all include a mix of attributes (tangible and intangible) that are either intrinsic or extrinsic to the branded product or service itself. A cursory overview of two well-known models is sufficient to provide insight into the complex nature of customer knowledge structures about brands.

Keller (1993) suggests that brand equity is the result of customer-held knowledge about many unique nodes for each brand, as illustrated below.

Figure 3-1: Dimensions of Brand Knowledge, Keller (1993), page 7
A somewhat different approach was taken by Jennifer Aaker (1997), who considered customers' brand images in terms of personality-like attributes.

![Figure 3-2: Aspects of Brand Personality, Aaker (1997), page 352](image)

Other models of brand knowledge structures are similarly complex. The key consideration for this argument is that the knowledge, image, and personality of a well-developed brand can be both complex and nuanced. For fully cobranded certification, the richness which comes from combining the images of two well-developed brands can make their alliance more complex, interesting, and appealing.

### 3.5.2. Unidimensional certification brands: simple knowledge structures

Not all certifiers have a fully-developed brand image (as noted above in section 3.4.2.1). In particular, brands which are designed specifically to be certifiers can have a very simple, almost unidimensional knowledge structure for the target consumer. Examples include Fairtrade, which means ethical; Bio-Gro, which means organic; or Energy Star, which means energy efficient. For the purposes of certification, the knowledge structure of these brands is very concise, and this works well for creation of learning and memory. The unidimensional meaning of a certification brand is easy to learn and remember, and adds a single, simple node to the pre-existing schema of the certified brand.
It is true that behind each of these certification brands is a full-fledged business (the certifier), with a range of objectives, procedures, and communication programmes. Fairtrade, for example, is a business with staff and procedures which ensure that certified coffees meet social and environmental standards. The programs are complex, including consideration of environmental farming performance, fair pricing, and access to clean water, education, and medical care for coffee farm workers. Any stakeholders who know this company, or other persons with a high level of knowledge and involvement around these issues, will perceive a detailed knowledge structure around the Fairtrade brand.

The direct stakeholders of these businesses are, in essence, experts about the brand, and will have a complex, articulated image of the certification brand. But most consumers are novices about the companies involved, with little specific knowledge about these brands or their business. For these target consumers, the certifying brand is a simple, unidimensional indicator, cue, or signal about a property contained in the certified brand.

3.5.3. Claims versus certification.

Virtually any new attribute could, in theory, be added to a brand knowledge structure simply by making a general claim or by quasi-certifying a highly specific performance claim. Third-party certification is often used when the new information being added is substantially discrepant from the existing brand image, and a stronger rationale than an unsubstantiated claim is needed. Under these circumstances, manufacturers use certification as a strategy to make the discrepant information more believable. The fast food-weight loss certifications described earlier (Jared Fogle-Subway and Weight Watchers-McDonald’s) are good examples of adding positive but highly discrepant information to overcome pre-existing negative associations with the certified brand.
There may be little need for third-party certification in organisations which already possess the elements which can underpin credible claims. The Body Shop was founded with a set of socially responsible principles, and has made many claims about this. The Body Shop has done little third-party certification to bolster its image or claims because it is not needed. Outside certification is not necessary because these attributes are at the core of The Body Shop brand image.

When organisations do have particular image shortcomings to solve, a third-party certification can lend credibility and weight to image-remediation claims. This is often used in areas of social responsibility. Over a period of years, Starbucks was criticised for buying coffee farmed with exploitative labour practices, and McDonald's was implicated in practices which led to tropical deforestation. Both companies used third-party certification programs to help combat brand image problems. Starbucks began using Fairtrade Coffee in 2000, and has become the largest worldwide purchaser of this commodity. McDonald's chose to use Rainforest Alliance Certified coffee for all of its McCafé coffees. Although McDonald’s would have benefited from using Fairtrade coffee, the choice of the Rainforest Alliance certification more closely addressed the image deficit it was working to correct. Furthermore, using an alternate certification scheme offered a point of difference versus Starbucks. In both cases, the use of a third party makes the claims more credible.

3.6. Signals, cues, and information integration

There are several approaches to understanding how and why consumers use information to make inferences about products. Areas of study have developed such as the economics of information (Stigler 1961, Nelson 1970), cue utilisation theory (Olson 1972), signalling theory (Spence 1973), and information integration theory (Anderson 1981). These theories make a general assumption that there is significant information asymmetry between producer and consumer, with the producer knowing more about the product than the prospective customer. Consumers collect information, to a greater or lesser degree, which may provide clues about the true nature of the product under consideration. If truthful signals are perceived and
integrated, economic efficiency and consumer welfare increase. If, however, signals are false or improperly interpreted, it will exacerbate the pre-existing market failure which was caused by the lack of perfect information.

These theoretical approaches generally lie at the intersection of economics, cognitive psychology, and marketing. All assume that the information used as a cue or signal has one or more subtexts, and that it functions metaphorically: a fact means more than it literally says. A high price, in literal terms, means only one thing: that the high-priced item requires a large expenditure to purchase. Consumers, however, infer a range of meanings that are not explicitly contained in the high price information. High price could be seen as a signal that a product is of good quality, of high status, contains quality ingredients, is made with care, or is rare or desirable. It may, or may not, be considered “expensive.” Alternately, high price might also signal that a product is overpriced, offers poor value, or is designed to take advantage of the gullible. Any, some, or none of these interpretations may be accurate in a given situation. The key issue is that consumers are making inferences in a context, and developing judgements which go beyond the logical outcomes which can be derived from the signals alone.

Often consumer judgements are valid. The assessments made by consumers are usually correct if a) manufacturers’ signals conform to general consumer expectations (say, by setting a high price for a superior product) and b) multiple signals, if any, are consistent. But they can be incorrect if manufacturers violate expectations (by setting a high price for an inferior product that cannot be fully assessed pre-purchase), or if inconsistent signals cause contradictory responses. The information is interpreted contingent upon the situation and interactions with other variables.
3.7. The addition of extrinsic information

Extrinsic information is data which is attached to a product or service, but not inherently an element or constituent of that service. In theory, the removal of extrinsic information should have no effect on the underlying product or service. In practice, this distinction is less clear.

Brand name and graphics are generally described as extrinsic, but adding or removing them from a product can alter it in some fundamental way. The disastrous case of New Coke demonstrates this issue. A formula which was rated as superior in blind taste tests was viewed as clearly inferior when the brand name was added. The actual tangible product (the blind-tested new formula) was unchanged, but the addition of extrinsic information (the Coca-Cola brand name) dramatically altered how it was perceived. This implies that the line between extrinsic and intrinsic attributes is not absolute, and some “extrinsic” attributes also have endogenous effects.

Certification is always an extrinsic cue, and the review of previous research in this area provides useful insights. Both products and services have a range of intrinsic properties which are directly tied to the product or service experience itself. These would include highly tangible attributes (size, shape, colour) as well as attributes which are must more ambiguous from the consumer point of view (perceived quality, or the taste of a wine). In addition, most branded entities have a range of extrinsic information added, including advertising claims, price, warranties, and certifications. Consumers rely on both intrinsic and extrinsic information to make judgments and develop opinions about a product or service. However, intrinsic and extrinsic information interact in complex ways.
3.7.1. The primacy of external cues

Extrinsic cues are important indicators of product quality, especially when that product quality is difficult to observe directly (as it often is in pre-purchase situations.) Zeithaml (1988) found that consumers use brand name, store name, and price as important indicators of product quality. Richardson, Dick, and Jain (1994) found that consumers rely most heavily on extrinsic information to form their opinions of brand quality. This is in part because extrinsic information is more available, and hence easier to process, than the often-concealed intrinsic properties of a product.

Consistency of cues is an important issue (Kirmani and Rao 2000; Miyazaki et al. 2005; Patarapongsant 2008). In general, more extrinsic information is beneficial (Nilsson 2005), but only if it is not contradictory. In the event of conflicting cues, consumers generally weight negative information more heavily (Miyazaki et al. 2005). Intrinsic attributes are not inherently consistent: they can reinforce one another, contradict one another, or both. Simultaneous reinforcement-contradiction can be seen in the paradoxical situation where a bad-smelling disinfectant is perceived to be more effective than a good-smelling alternative.

In general, individuals appear to rely on external cues more strongly than their own sensory perceptions. Garber, Hyatt, and Starr (2000) found that when respondents were given contradictory visual signals about product flavour (a purple-coloured orange-flavoured drink), they overwhelmingly relied on the visual cue to judge product flavour. Similarly strong results have been found when comparing the use of purely extrinsic and purely intrinsic cues. Priilaid et al. (2009) determined that wine drinkers relied more heavily on expert ratings than on their own perceptions of wine taste. In another tasting experiment by Veale and Quester (2009), consumers relied more heavily on pricing information than on the actual quality of cheese, and country of origin also had a significant effect. Richardson, Dick, and Jain (1994) found that shoppers relied primarily on extrinsic cues, rather than intrinsic characteristics, to judge the quality of store brands. Teas and Agarwal
(2000) confirmed that brand name, store name, price, and country of origin all had significant effects on perceptions of quality.

A range of additional studies over the past half-century supports the very strong effects which extrinsic cues have on customer perceptions. This is, in part, because extrinsic information is often seen as an implicit indicator of quality, and certified information attempts to maximise that impression. It is useful to consider warranties, which are specific promises that consumers have specific recourse in the event of product failure. This, in turn, is seen as a strong indicator of product or service quality.

3.8. Warranties and certification: similarities and differences

There is a strong conceptual linkage between warranties and certification: they are not identical, but there is substantial overlap in perception and functions. A warranty is a promise offered by a seller that goods will conform to specifications, or perform in a manner which might reasonably be expected. If this is not the case, the seller is legally required to provide specific remedies such as repair, replacement, or refund. Certifications are also a promise, and their legal and perceptual similarities with warranties are discussed below.

3.8.1. Legal similarities of warranties and certifications

The legal ramifications of warranties are well-defined, and the background of express and implied warranties is discussed below. A certification may also have legal ramifications which are similar to those of a warranty, depending on the circumstances and language employed. A certification is a promise that a good or service has a particular property. In a legal sense, such a certification might be legally construed as a warranty under some conditions, according similar rights to customers and imposing defined responsibilities to sellers. In legal terms, a certification may create a specific express warranty, or it may simply be construed as a piece of non-enforceable puffery. Thus, in a legal sense, certifications and warranties can have very similar implications.
3.8.2. Perceptual similarities between warranties and certifications

Both warranties and certifications have perceptual and psychological functions for the purchaser, and may be perceived as certifying the quality or durability of a product. These perceptual functions can occur only if potential purchasers have knowledge of the specific warranty/certification promise, or can deduce the presence of a warranty from prior knowledge.

Under some circumstances, purchasers can correctly deduce the presence and implications of a warranty from pre-existing knowledge, without the need for additional communication. For example, consumers may know that a particular piece of legislation (such as the United States Uniform Commercial Code or the New Zealand Fair Trading Act) requires sellers to remedy problems with their products in certain specific ways. Under these conditions, consumers can be aware of the presence of a warranty, and act on that knowledge, without the warranty being specifically communicated.

More typically, if sellers believe that their warranty terms are helpful in the marketplace, then active communication about the warranty is likely to occur. However, a warranty may exist, and would be legally enforceable, whether it is communicated strongly, weakly, or not at all. The presence of the warranty, and its legal enforceability, is often regulated and can be independent of how or whether the warranty is communicated.

Certifications differ from warranties in how they are normally communicated. Unlike warranties, certifications are not legislated, and cannot be inferred to exist, though they may have legal implications as discussed earlier. Certifications exist primarily as a marketing tool, and they are nearly always communicated at some level. It is possible for a seller to certify its goods but not communicate that certification, but that is a special case. A certification which is not communicated would have no effect on potential buyers, and effectively does not exist. Thus, we see that warranties can certify, and certifications can warrant, but it is contingent upon the circumstances and the specific executions employed.
3.8.3. Functions of warranties

Emons (1989) reviewed the literature on warranties, and segmented the theoretical rationales for warranties into two basic streams. The first stream was to reduce risk through providing insurance against product failure (the insurance motive), to indicate higher quality (the signalling motive), or to spur sellers to improve product quality (the incentive motive). The second stream is the use of warranties as a marketing device to gain higher prices by appealing to consumers with different preferences (a sorting mechanism).

Certification can be mapped across these same theoretical rationales as well. Certification is primarily an approach to strengthen marketing efforts, and it is clear that certification can be used to appeal to different consumers with different preferences (the sorting mechanism) or to imply higher quality (the signalling motive). The insurance motive, indicating to customers that the certified product is likely to perform well, is also relevant. Thus, the three customer-centered rationales for warranties can also be applied to certification.

The fourth rationale for warranties, the incentive motive, is focused on the behaviour of sellers. It can also be applied to a subset of certified products. Many certification programmes exist to improve the business practices of the certified organisations and products. Examples include service quality certifications (*MobilGuide* or Qualmark hotel ratings), environmental certifications (Forest Sustainability Council or the German Grüne Punkt recycling programme) or health concerns (Heart Tick or organic certifications).

The theoretical rationales for warranties have recently been empirically tested (Chu and Chintagunta 2011). In the context of search goods (computer servers and automobiles), they found support for the insurance motive (providing assurance against product failure) and the sorting mechanism (appealing to customers with different quality perceptions). They did not find support for the signalling motive or the incentive motive. These results are partially applicable to certification. It suggests that because warranties do provide assurance and help amplify quality appeals,
certifications may work in similar ways. Although there is an absence of evidence for the signalling and incentive motives, this does not imply that they are irrelevant to certification. As noted above, it is clear that many certification programs exist primarily to provide incentives for producers to improve their product quality. It is also clear that the signalling function is an important rationale for certification, and prior studies (reviewed in section 3.2 above) show strong evidence that certification can support a large price premium.

All of the basic economic rationales for warranties can be applied to certification, although it is worth noting that these rationales are highly rational (not emotional) and lack nuance. All the consumer-based rationales are variants of providing further information to justify price/quality levels. There is a wider range of more subtle psychological approaches which apply more strongly to certification than to warranties. These are discussed in greater depth in following sections.

3.8.3.1. Express warranties

Originally warranties were once viewed very narrowly, limited to explicitly written contracts with clearly stated provisions and remedies. More recently, legal practice has recognised that manufacturers’ claims can create warranty liabilities even in the absence of an explicit contract. In the United States, the Uniform Commercial Code states that affirmations of fact or promise can, under many circumstances, create an express warranty (Lewis 1986). The key circumstance under which an express warranty is created is when the "natural tendency" of the affirmation or promise is to induce the customer to purchase (Murthy and Blischke 2006). Such affirmations can occur in advertising or labelling, and it is clear that many quasi-certifications can and do create express warranties.

Express warranties allow customers to seek redress of grievances if they believe that the warranted conditions are untrue. There is considerable ambiguity in the law on this subject. Claims which are intended as puffery, and obviously express opinion rather than fact, will not create an express warranty. The more strongly factual a claim is, especially in terms of its specificity and verifiability, the more likely it is to
create an express warranty. Such factual claims are exactly the type of affirmations which are most likely to be certified by the manufacturer or by third parties. Hence, such certification operates within the legal framework of warranties, and can create liabilities for both certifiers and certified brands. It appears likely that certification is also perceived by potential customers in a manner consistent with explicit warranties.

3.8.3.2. Implied warranties

The United States Uniform Commercial Code also provides for implied warranties (Weintraub 1974) based on the “merchantability” of goods and fitness for purpose. These implied warranties are both unwritten and unspoken. Merchantability implies that the goods are suitable for sale, conform to typical standards of care, and that they are of approximately equal quality to similar offerings. Of potentially more importance is the implied warranty of fitness for purpose. Many certifications, both quasi-certified and third-party, have the potential to create an implied warranty of fitness for purpose. If, for example, a brand uses the legally vague term "hypoallergenic," it is reasonable to conclude that such a claim implies the brand is suitable for persons with allergies.

3.8.3.3. Perceptions of warranties

It is clear that many types of certification can evoke consumer impressions which create express and/or implied warranties. This in turn means that certification often functions legally in the same way as a warranty. Since both the consumer perceptions and legal implications of certification have clear similarities to warranties, it is logical to conclude that research on warranties might provide some insight into certification. Warranties have been described as a persuasive sales variable (Kendall and Russ 1975), and this is the precise reason that most certified claims are made.
Shimp and Bearden (1982) manipulated warranty quality, warrantor reputation, and price as extrinsic cues to determine their effect on consumers' risk perceptions. In an experiment using student subjects, a strong warranty did reduce perceptions of financial risk, but not of performance risk. Although the authors conclude that extrinsic cues seem to be incapable of lessening uncertainty around performance risk, this appears to be an overgeneralisation. None of the extrinsic cues employed were specifically targeted at reducing perceptions of performance risk. In circumstances where the external cues are designed to reduce performance risk perceptions, it is more likely that these effects would occur. In many cases certification claims are used as extrinsic cues for precisely this reason.

3.9. How certification functions psychologically

Several psychological approaches can provide insight into how certification might function perceptually. Generically, the addition of certification restructures how consumers perceive or remember the certified brand. It is unlikely that there is a single explanation for how certification works, and it is feasible for multiple psychological effects to occur simultaneously. This section will briefly review risk perception, and consider five possible explanations of how certification can work psychologically: framing, schema theory, changing attribute salience, restructuring the information environment, and source credibility.

3.9.1. Certification and risk perceptions

Certification is used to make products more attractive to potential customers. One way to do this is to reduce the perceived risk associated with the purchase. Roselius (1971) suggested a normative list of risk-reduction strategies used by consumers. Of 11 proposed methods for reducing perceived risk, at least four involve some use of certification or similar processes (private testing, government testing, endorsements, and money-back guarantee) and two others involve an indirect transfer of reputation, which are arguably somewhat similar to certification (major brand image and the image of the store where the product is sold).
Risk is a complex, multidimensional construct, and it is essential to split it into components to understand its various effects. Bettman (1973) suggested that risk could be separated into inherent risk (the latent risk associated with a product class in general, such as the dangerousness of a chain saw) and handled risk (the amount of emotional conflict from choosing a particular brand, after taking into account mitigating factors, such as the reliability of a Stihl chain saw). This schema is useful, but arguably too abstract to provide strong insights for certification.

Jacoby and Kaplan (1972) subdivided perceived risk into 5 subcategories: financial risk, performance risk, physical risk, psychological risk, and social risk. This schema is useful for certification considerations, as certification can be used to mitigate any one of these risks, or sometimes more than one at a time. The level of each of these risks is context-dependent, as they interact with product categories and particular situations. An inexpensive product might have little financial risk, but substantial social risk if it is seen as inappropriate for a particular situation.

Dunn, Murphy and Skelly (1986) showed that risk was a significant factor in purchasing of less-known supermarket brands. They found that perceived performance risk was highest for generic products, moderate for store brands, and lowest for national brands. This finding is logical, as a generic brand is essentially a product only, with little addition of extrinsic information, brand equity, or certification.

One extrinsic cue which is added to generic products is a low price, and this can have broad perceptual effects. Consumers generally equate higher price with lower performance risk, though sometimes price appears to have little effect (Drewal, Gotlieb, and Marmorstein 1994). We can speculate that a low price would usually exacerbate concerns about performance risk in the absence of prior experience with the product. It has also been found that negative message framing and low source credibility are significant moderators which increase the effects of price perceptions on performance risk (Drewal, Gotlieb, and Marmorstein 1994).
Perceived performance risk has been found to interact with sales promotions (Lowe 2010). For products with a low perceived level of performance risk, promotions offering free product are preferred. For products perceived to have a high performance risk, financially-based promotions are preferable. This implies that if certification can reduce perceived performance risk, it would also change the effects of promotional programs.

Expert opinion (a highly credible centrally-processed extrinsic cue) has been found to significantly reduce perceptions of performance risk, and significantly increase purchase intentions (Aqueveque 2006). Therefore some types of certification, which are a specialised type of expert opinion, would logically have similar effects.

Hirunyawipada and Paswan (2006) looked at the effect of various types of risk, including performance risk, on the propensity of customers to acquire novel information. The found mixed support (positive in one model, no effect in a second model) for the hypothesis that higher perceived performance risk is associated with greater information acquisition. This implies that consumers faced with a perceived performance risk might be more inclined to notice, seek out, or process the type of information that certification can provide.

Agarwal and Teas (2001) explored performance risk in the context of quality and value. They found that performance risk was negatively related to both quality and value perceptions, and positively correlated with financial risk. This implies that reducing perceptions of performance risk, possibly through the use of certification, could improve quality and value perceptions and lower the perceived financial risk of a purchase.

Taken together, the research on performance risk indicates that it has broad negative associations with perceptions of quality, value, purchase intent, and other types of product-related risk. Clearly, any strategy which can reduce perceived performance risk has the potential of fostering positive effects in product perceptions. Although there was little direct research on the topic, it is apparent that
certification could be used to change produce perceptions in a way which reduces perceived performance risk. Furthermore, different uses of certification can also reduce perceptions of other sorts of risks, including financial risk, physical risk, psychological risk, time risk, and even social risk. It appears likely, therefore, that certification may commonly gain its effectiveness from reducing customer perceptions of risk.

3.9.2. Framing

Certification can be seen as creating a change in framing (Tversky and Kahneman 1986), in which changing some aspects of how an object or situation is presented can potentially result in a dramatic shift in how it is perceived. No specific research has been found which considers the effects of framing in certification. A cursory overview of marketplace examples shows that most certification employs positive framing (e.g., a three-star Michelin quality rating). A different approach, also used, is to achieve positive framing through a double negative, a negative framing of negative attributes. Typically this mentions a reduced level or total absence of an unfavourable attribute (e.g. "low in saturated fat," "GE free"). This can be viewed as similar to a negative comparative advertising claim (Sorescu and Gelb 2000), as it allows for the possibility (if not even insinuates) that other uncertified products may contain the negative attribute.

No examples of purely negatively framed certification have been noted, and are unlikely to occur. No product would voluntarily affix a negative certification, and if a product fails to achieve certification, it is unlikely to publicise that fact. Certification can have a less than entirely positive valence, depending upon the observer’s frame of reference. The Qualmark system ranges from one to five stars, and a one-star rating (“acceptable”) is arguably weak enough to be negative, particularly in contrast to higher-rated competitors.

Re-framing can occur from the combination of cues or signals conveyed by the certification. The certification process typically highlights an important attribute, with positive appeal to consumers; adds a credible and salient source as a certifier,
which lends some of its equity to the certified brand; offers a warranty that the certified attribute is, in fact, contained in the product; and brings other attributes, such as the fact that the certified brand has taken time, trouble, and expense to certify. Some or all of these factors will reframe the certified brand, typically in a positive way, and change consumers’ perception of it.

3.9.3. Schema theory

Based on their review of schema research, Sujan and Bettman (1989) suggest that individuals process information about a brand using their pre-existing schemas about that brand. New information which is provided to individuals about a brand can vary from facts which are highly consistent with the pre-existing schema (slightly discrepant), partially consistent (moderately discrepant), or substantially different (strongly discrepant). The degree of discrepancy will determine the way in which information processing and memory restructuring occurs.

Sujan and Bettman further suggest that slightly to moderately discrepant information is likely to be assimilated into the pre-existing schema, rather than accommodated by creating a new or highly-modified schema. This suggestion is based on the schema + tag model of memory (Graesser, Gordon, and Sawyer 1979; O'Sullivan and Durso 1984). In this model, new information is assimilated by adding a mental "tag" to existing knowledge. As a metaphor, this is similar to adding an adhesive coloured flag to a physical document, thereby modifying and highlighting the pre-existing document.

The schema + tag model is particularly applicable to the process of certification. While brands are complex and multidimensional, certifications are generally simple and unidimensional. The certification exists as a means to tag a new attribute onto a pre-existing knowledge structure about a brand. Certification is a strategy which allows new attributes to be headed to a brand knowledge structure in a straightforward and credible way. Arguably the more discrepant the information is, the more important certification becomes.
3.9.4. Changing attribute salience

Salience is an important construct with a range of meanings. Cash et al. (2002) define it in a narrow sense, which is closest to its meaning in most of the psychological literature: "Salience refers to the relevance of information for an actor's decision choices, or for the choices that affect a given stakeholder” (p. 4). More broadly, salience can be defined as "making a piece of information more noticeable, meaningful, or memorable to audiences” (Entman 1993, p. 53). Both of these definitions are relevant to the effects of certification on salience.

Salience of information has strong effects on a receiver of information. Increasing salience will strengthen perceptual processes, increase the level of cognitive processing, and assist in storing related information in memory (Fiske and Taylor 1991). Simply drawing attention to an attribute makes it more salient, and this alone is likely to make it more important in the consumer's decision making process. Manufacturers commonly use colour, typography, and graphic devices on packaging to draw the attention of consumers to particular pieces of information.

Certification takes this process a step further. Certification is typically used by manufacturers as a strategy to increase the salience of information they believe is favourable to their brands. In some cases, this is at the level of creating awareness for the first time: certification signals that an attribute previously unknown to the consumer exists in the certified brand. Often these unknowns are credence attributes, which generally cannot be perceived by consumers unless an extrinsic signal is added.

In other cases, certification is used to strengthen weak associations. The certification can draw attention to an attribute or benefit which is weakly associated with the brand, thereby making that attribute more salient. McDonald's developed an advertising campaign for its New Zealand restaurants to build awareness of their use of local ingredients. Certification-like aspects included the use of cobranded supplier names as well as region of origin designations.
3.9.5. Restructuring the information environment

Certification may also alter the way the consumers perceive certified products by restructuring their information environment. Certification increases salience by adding new information, making certain attributes more prominent, lending source credibility to claims, and strengthening the relevance of attributes. By restructuring the information environment, consumers may come to view information about a brand in a different light, and make decisions in a different way. Fotopoulos and Krystallis (2003) argue that certification can transform aspects of food from credence attributes into search attributes. The credence attributes, which were previously very difficult to perceive, can become a visible and key basis for decision-making.

In addition to changing the awareness or strength of association of an attribute, certification can also help change the meaning of an attribute or product. The New Zealand-based Active Manuka Honey Association has developed the UMF® [Uniform Manuka Factor] certification for manuka honey, which numerically indicates the level of antibacterial activity a particular batch of honey contains. The addition of this previously unknown attribute has restructured the information environment by becoming salient, accessible, and a basis for search. This restructuring even changes the perceptions of product category: honey, normally used as a food, is now perceived as a wound dressing. [Note: it is possible to argue that the restructuring of information results in a reframing of the brand, which is an equally plausible explanation. Both effects may be occurring simultaneously.]

Making attributes more salient through certification can restructure the basis on which consumers make their decisions. Ethical certification brands such as Fairtrade have brought an entirely new attribute—social responsibility—to a variety of product categories. Similar effects on decision-making occur with free-range eggs, or free range pork. In these situations, a new attribute has been added to the decision-making task, and the relative importance of all attributes has changed dramatically for some consumers. Some segments of consumers now make decisions in which traditional attributes such as brand name, flavour or price are subordinate to ethical
considerations. A previously unknown attribute has become a key search attribute, and a signal of credence properties.

3.9.6. Source credibility

Certification is often provided by a (presumably objective) third-party organisation with some level of appropriate expertise. This combination should, on average, raise the source credibility of the certifier, and experimental studies support this contention (Parkinson 1975; Amyx, Bristow, and Robb 2009). Because main effect studies have generally shown that high credibility information sources create greater persuasion than low credibility sources (reviewed in Pornpitakpan 2004), we can conclude that certification is likely to increase persuasion by increasing the source credibility of the certified information. This logic assumes that the consumer does not question the commercial arrangements or the motives of the certifier, which could reduce source credibility.

The credibility of a message source has been found, in general, to have significant positive effects on persuasion (Sternthal, Dholakia, and Leavitt 1978), but these effects interact with other variables in complex ways. Source credibility is not unidimensional: it contains aspects such as trustworthiness, perceived expertise, and the attractiveness of the source (Ohanian 1991). Even highly correlated aspects of source credibility, such as trustworthiness and perceived expertise, have been found to have independent effects (Weiner and Mowen 1986). These different aspects of source credibility can interact with a consumer’s pre-existing attitudes to affect the decision process (Sternthal, Dholakia, and Leavitt 1978), sometimes with unpredictable results. The unpredictability is probably due to the many factors that can interact with source factors, including message, channel, receiver, and destination variables (Pornpitakpan 2004).

Some work on source credibility has been framed in terms of the elaboration likelihood model (Petty and Cacciopo 1981). Wu and Shaffer (1987) found that respondents given direct experience with a product were more likely to play back cognitive message arguments. This implies that these respondents were following a
central route to persuasion in which source credibility (typically more associated with peripheral cues) is less important. Certification is not inherently either a central or a peripheral cue: it can be configured to convey either type of information, or a mixture of the two. The Wu and Shaffer research suggests that when more direct product experience is available, the source credibility of the certifier is less important. Direct experience will override peripheral cues, which are most affected by source credibility perceptions.

Friedman and Friedman (1979) considered the relationship between endorser type and the nature of the product being advertised. Using the elaboration likelihood model as a frame, they found that expert endorsers had stronger effects on products with financial, performance or physical risk. However, celebrity endorsers were more effective for products with psychological or social risk.

In most certification settings, certified brands add specific claims to build a stronger rational case for purchase. In this non-emotional context, manufacturers tend to place the emphasis on credibility (trustworthiness and perceived expertise) rather than source attractiveness. Based on the complex contingencies found in prior research, it is clear that the effectiveness of certification which uses a source credibility appeal will vary on a case-by-case basis. Overall, however, it is reasonable to assume that a) claims certified by a third party will generally have greater source credibility and b) this is likely to make consumers more positively inclined towards the brand under most circumstances.

An additional source-related attribute has been adopted in the public policy literature which may have applicability to certification. This research holds that effective decision-making depends upon information which is simultaneously salient, credible, and legitimate (Cash et al. 2002). In this context, credibility is framed as scientific plausibility, and legitimacy is defined as "whether an actor perceives the process in the system as unbiased and meeting standards of political and procedural fairness" (Cash et al. 2002, p.5). This has some conceptual similarity to trustworthiness, and is likely to have similar effects in a decision-making context.
3.10. The ethics of certification

A key tenet of classical economics is that all market participants must have access to full and accurate information. If there is information asymmetry such that buyers or sellers know relevant information which is unavailable to others, a market failure can result. Certification exists to provide credible information, and as such it can theoretically correct asymmetries in information, thereby improving economic efficiency (Kirmani and Rao 2000). But what if the information provided is not credible, and the signal it creates is incorrect? Under these circumstances, a very unfortunate situation occurs: economic efficiency is reduced, and organisations are violating explicit promises they made to consumers, a major ethical problem.

Darnall and Sides (2008) conducted a meta-analysis of voluntary environmental programs which analysed an aggregated total of nine studies and over 30,000 firms. Such voluntary programs are clearly intended as certification of the participating businesses. While there is no direct evidence about how these programs were perceived, research in other areas overwhelmingly indicates that certification programs substantially improve customer perceptions. It is therefore likely that customers would perceive these voluntary environmental programs as valid and reliable indicators of environmental performance, and would purchase certified products to a greater extent.

Contrary to this expectation, Darnall and Sides found that the environmental performance of nonparticipants is clearly better than certified participants. Uncertified businesses improved their environmental performance by 7.7% more than certification participants, and improved the environment by 24% more in absolute terms. There is an obvious ethical problem exposed by this study: customers presumably expect such certification to improve environmental performance, and may rely on environmental certification as an accurate cue. In reality, certification appears to have the opposite effect, and is associated with poorer environmental performance. If consumers rely on the certification as intended, it will result in poorer decisions.
There is, as yet, no good explanation for these results. These organisations may be operating in bad faith, and simply taking advantage of their customers. This is common in the environmental field, and has spawned two terms to describe it: "greensham" and "greenwashing." Other explanations could exist. It may be that certified organisations unintentionally relax and become less stringent after certification. Further research is required to understand this phenomenon.

3.11. Certification of authenticity

The certification of authenticity, particularly indexical authenticity, has a long history. For items such as religious relics, formal assessment and recognition of their authenticity was a solemn and important task. In many cases, religious authorities were faced with recognising, or rejecting, a nondescript set of human remains as the relic of a saint. One part of the provenance process was the examination of documents (authenticae) which were found in the tomb or reliquary itself. If the documents and other evidence were in order, a relic could be “elevated” (essentially, certified as authentic) and offered to the public for veneration (Geary, 1986).

Certification of authenticity is somewhat different than simple certification of quality. In some cases, certification explicitly guarantees quality as well as authenticity (e.g., a Canon camera worldwide warranty, assuring that the camera is both of quality and legitimately imported and sold). In other cases, it is a guarantee of iconic authenticity, that it is a faithful duplicate of an original (any authorised reproduction). In the case of provenance for an artwork, certification warrants that the artwork is authored by a stated artist, and this is signalled by the completeness and legitimacy of its past chain of ownership. Certification of authenticity for artwork can consist of a detailed ownership history of the work, documentation of its previous exhibition history, other relevant information, and an opinion as to its genuineness. Place of origin can be an indicator of authenticity, and some marks guarantee origin. As the concept of authenticity has become more fashionable, there is a higher level of certification of genuineness which is being used in the marketplace, covering a broad range of attributes.
3.12. Gaps in the literature and opportunities for research

Despite the prevalence of certification, there is little marketing-specific research on the topic. A better theoretical basis for certification is needed, including understanding the perceptual and cognitive ways that certification functions. Because certification is often executed as a form of co-branding, it would be useful to understand the differences between high-meaning independent brands and low-meaning certification brands. A taxonomy of different approaches to certification would also be useful.

To date, no specific research on certification of authenticity has been found. Authenticity is a high-level abstract concept, and certification typically attests to specific and often concrete attributes. Similarly, the abstract concept of reliability or trustworthiness has been operationalised through adding a concrete and visible warranty to products, and this has provided a useful context for a productive stream of theoretical research. Understanding the specific interactions of certification and authenticity, and how certifying narrow and particular attributes can build a broad and abstract perception, is of theoretical interest.

This research will explore two specific gaps in the literature. First, little is known about how and whether certification affects perceptions of authenticity. Given that authenticity is not directly visible, and has strong credence properties, certification could be a logical approach to strengthening perceptions of authenticity. Secondly, there is an extensive literature on country of origin effects, but little is known about ethnicity of production, or the overlap between country effects and ethnicity effects. This research will use a specific country of origin designator, and contrast that with an ethnic certification which implies, but does not specify, country of origin.
3.13. Conclusion

Certification appears to offer a useful marketing option for many producers. It is an opportunity to use external, often third-party, information to frame a product or service in an advantageous way. There are multiple psychological processes which certification can affect, including reducing risk perceptions, reframing a product, increasing salience of an attribute, bringing greater source credibility, and gaining greater memorability through modifying an individual’s memory schema. These effects are not mutually exclusive, and it appears likely that several (and potentially all) could occur simultaneously.

It is clear that we can construct a theoretical rationale for when, how, and why certification might be used. There is, however, limited direct research which attempts to develop theory around certification, and apparently no research which explores the effects of certification on authenticity. Furthermore, the boundary conditions for certification, those situations in which certification is effective or ineffective, are not known. Consequently, the experimental work conducted in this research will contribute by beginning to address this important gap.
Chapter 4. Authenticity Programmes in New Zealand

4.1. Buy New Zealand Made

A starting point for research issues was the consideration of local existing authenticity-related certification programs designed for economic benefit, specifically country of origin certification. One form of authenticity is being sourced from an appropriate location. This overlaps with country or region of origin, but is not necessarily identical. Some designators indicate only country of origin (e.g., “Made in China”) because the designation is too broad to lend an interpretable, context-specific meaning. Other designations bring associations which derive from, or lend meaning back to, the area of origin: New Zealand Lamb, Vermont Maple Syrup, or Welsh gold, used for British royal wedding rings.

There is a programme which certifies country of origin in New Zealand. The Buy New Zealand Made Campaign Ltd. is a private sector organisation funded by members. There are 1163 companies which are members of the organisation, and they are allowed to use a certification logo which indicates that a product was made in New Zealand. The earliest version of the logo, a stylised kiwi, originated in 1963. It was modernised in 1988 to include the triangle motif. The New Zealand Made programme is similar to a global range of country of origin certification programmes designed to develop improved quality associations, and often to encourage local production and consumption. The similar “British Made for Quality” certification programme was incorporated in 2001 for these reasons.

The purpose of this program is to add certification and an additional layer of branding to members’ products. This will presumably increase the attractiveness of the certified product to New Zealand consumers, or to overseas customers who value the idea of New Zealand made products. Country of origin is essentially a credence attribute. It is generally not visible as an intrinsic product attribute, or discernible from the name. For example, the fact that a fruit is named a kiwifruit
gives no clues to the country in which has grown. Labelling, or formal certification, is important because it is often the only way a customer can discern a product’s source.

The product characteristics which the Buy New Zealand mark actually certifies are somewhat vague. The organisation requires that any certified product be “substantially transformed in New Zealand,” and comply with country of origin guidelines in the Fair Trading Act. All responsibility for certification lies with the manufacturer using the mark. Some confusion was also created by the New Zealand government’s decision to stop funding the “Buy Kiwi Made” advertising campaign, which complements Buy New Zealand Made, but is not affiliated with.

Figure 4-3: Buy New Zealand Made Ltd. logo options
The graphic treatment of the Buy New Zealand mark offers latitude at the expense of a clear brand image. As illustrated above, there are three English and one Maori language version of the logo, each of which has alternate forms. Furthermore, any organisation member can change the colours of the logo as they see fit. As a result, there is less uniformity of use, and consequently weaker memory traces are likely to being formed in customers’ minds.

4.2. toi iho™ maori made

An original certification program, toi iho™, was developed to certify handmade items by Maori artisans. Creative New Zealand, a New Zealand government department, created the toi iho brand through its Maori arts board, Te Waka Toi, in 2002. In a press release, Creative New Zealand described it as "a reputation-building exercise for Maori and a mark of authenticity and quality for Maori, for New Zealanders and for international buyers of Maori artwork‖ (Creative New Zealand 2002a). Technically, this trademark certifies two dimensions: the ethnicity of the creator and the cultural appropriateness of his approach. A third dimension, country of origin, is omitted, although it is strongly implied. The toi iho trademark was designed to be used in a broad range of contexts, and was registered with the Intellectual Property Office of New Zealand to protect 32 classes of goods and 7 classes of services.

The Creative New Zealand documentation of the trademark makes it clear that there were two main strategic purposes: first, to certify that the trademarked item had an authentic tie to a Maori creator and second, to provide an assurance of quality. The target market was both domestic and international: "The toi iho hallmark is aimed at the domestic market, [as well as] international tourists and tourism interests, and means people will be able to identify high-quality-authentic Maori art (Creative New Zealand 2002b)." The trademark was clearly construed as useful for and attractive to international tourists, but it was never restricted to this target audience. The mark can be useful for New Zealand-based Maori and non-Maori customers as well.
4.2.1. Certification procedures for toi iho licensees

The toi iho trademark was designed in three variants, with different colours and nomenclature to distinguish among them. The toi iho Maori Made trademark, used for this research, is reserved exclusively for artists of Maori descent. The trademark requires that all production be done by Maori artisans. The toi iho Mainly Maori trademark is targeted at a broader group of artists. Mainly Maori can be used on products produced by a group of artisans if the majority of producers are of Maori descent. A third trademark, the toi iho Maori Co-production trademark, was designed for artworks in which Maori had a leading role in conceptualisation or design, but production was partially or totally outsourced to others of different ethnicities. All of the three toi iho trademarks certify both the ethnicity of the creators, as well as the general quality and cultural appropriateness of their approach. A third dimension, origin in New Zealand, is not specifically mentioned in any way, although it is implied.

![Figure 4-4: Variants of the toi iho logo](image)

The application process to use toi iho is rigorous. The description to potential applicants stated:

“You will need to provide additional material and references in support of your application and examples of artwork that you have created. You will also need to confirm that you are of Māori descent. This means you need to complete a whakapapa form (provided with the application form) specifying the iwi you are affiliated to, who your parents are, and who your grandparents are. A kaumātua or kuia from your iwi or urban authority member will need to verify the whakapapa information.”
Your application will be assessed by a panel of senior Māori artists who are recognised in the Māori arts community as having a long history of creating high quality Māori artworks. The panel will examine your application in terms of the type of artworks you create, how you have used Māori concepts, designs and/or symbols in your work, and the materials, techniques and processes you have used. They will also study your artistic portfolio, examine examples of your work and note the references that you have provided in support of your application.” (Ministry of Economic Development 2007, p. 17)

The toi iho trademark can be applied to either Maori artists or to Maori-focused retail outlets. Once an artist is certified to use the mark, they are able to add the toi iho trademark via a sticker or hanging tag to their individual art items. An annual license renewal is required, but no further certification procedures are needed. After the initial round of evaluations in 2002, 38 Maori artists and 6 retailers were licensed to use the toi iho trademark.

4.2.2. Overlap with country of origin certification

Certification of ethnicity of origin is related, but not identical to, country of origin. All examples of ethnic trademarks found during this research referred to ethnic groups which typically reside within a single country (e.g. Australian aboriginals, Native Americans). The combination of two distinct identities clearly interact: there is an obvious difference between something which is "made in America" and something which is "made by a Native American." Ethnicity is also not restricted by political borders, and this is also true of New Zealand, which has approximately 10% of New Zealand citizens (of various ethnicities) living abroad. The Maori population of Australia is estimated at over 40,000. As globalization continues, and wholesale migration of peoples occur, it is clear that the relationship between ethnicity and country of origin may become more tenuous.

These issues to apply, to some extent, to the toi iho Mark. Although being made by Maori, or being toi iho™ certified, certainly implies being made in New Zealand, this is not always the case. There are also Cook Islands Maori, as well as a sizable Maori population which has settled in Australia. An example can be seen in the case of the toi iho™ certified artist Mark Brocas-Reti. He is Maori, and was described on the toi iho™ website as educated in Los Angeles, a winner of an Australian jewellery award, and an owner of jewellery shops in Sydney and Melbourne. Brocas-Reti has
been an expatriate for over 20 years. It is logical to assume that the toi iho™ mark might interact with context when perceived by a consumer. A patron who met Brocas-Reti in his store in Melbourne would realise that he lives in Australia. Under those circumstances, the toi iho™ mark might be viewed as a mark of quality and cultural authenticity, but not country of origin. A buyer who purchased a Brocas-Reti item from a New Zealand retailer or online, on the other hand, might assume that toi iho™ implies New Zealand production. Thus, the understanding of the connotations of a certification mark can interact with context, and the meanings of the mark may be somewhat different than a consumer expects.

The program grew to a total of 240 certified artist and retailers in 2008-9, but was never a large or heavily-promoted venture. Creative New Zealand made the decision to stop supporting the toi iho™ certification programme in October 2009. The stated rationale for discontinuation was twofold: first, they believed the programme was not cost-effective, and second, they found no evidence of the program increasing sales of Maori art by artists or stockists (Creative New Zealand 2009).

4.2.3. Future of the toi iho trademark

A new corporate structure which will allow for continuing operation of the toi iho trademark has been created. Ownership of the mark was transferred to a new Maori-owned limited liability company, the toi iho Kaitiaki [guardians] Incorporated, which also refers to itself by acronym (TIKI). Following a quiet period of transition, the TIKI board began a renewed marketing push for the toi iho trademark in October 2011. Special exhibits of toi iho branded artworks were arranged to be exhibited at VIP lounges in different Rugby World Cup stadiums around New Zealand in late 2011. A special large exhibit was planned for the waka-shaped Maori exhibition pavilion in Auckland.
4.2.4. Research implications of the toi iho trademark

The change in ownership had no impact on this research. The toi iho™ mark was chosen as a stimulus because it represents an excellent, professionally designed certification mark with little pre-existing awareness. Diagnostic questions on awareness of the trademark in both Study 1 and Study 2 confirmed that there is little existing awareness of the toi iho mark. For experimental purposes, it is conceptually equivalent to an artificially created stimulus. Because of the low level of pre-existing awareness among respondents, no threat to internal validity of the study is seen. This is discussed in depth in relation to internal and external validity issues.

However, the use of a real trademark in conjunction with an appropriate product category does offer the opportunity for external validity and managerial usefulness. The results of this study provide a clear indication of the assets and liabilities that this particular trademark can offer in a commercial context.
Chapter 5. Conceptual Development and Hypotheses

5.1. Justification for the research

Authenticity is a complex and nuanced concept. It is an intuitive, personal, and highly individualised assessment of an item or experience made in a particular context. While there is substantial empirical research in many fields about the concept of authenticity, such as the recent work by Beverland and Farrelly (2010), this work is predominantly interpretive in nature. There is little quantitative work (except that by Grayson and Martinec 2004) which considers the perceptions, antecedents, and consequences of authenticity.

This research is intended to improve the understanding and measurement of the authenticity construct, and examine the potential effects that certification may have on perceptions of authenticity. This objective creates some natural and intentional limits on the scope of the research. The key relationships of interest are detailed below, presented as a series of testable hypotheses.

Most of the hypotheses in this chapter have been neither proposed nor previously tested in other research. These hypotheses are theoretically-based, drawing upon prior work in authenticity and certification research, as well as the exploratory research done for this thesis. When taken together, tests of these hypotheses should provide a good initial insight into how certification and authenticity interrelate.
5.2. Basic experimental design

As noted above, much of the empirical research on authenticity is interpretive. This is appropriate for understanding the complex structure of perceptions of authenticity, and the richness of the ideas associated with it. Nonetheless, while interpretive research excels at building insight into complex constructs, it is less useful for developing generalisations. This is a need for further quantitative research on authenticity to allow for broader conclusions. This work will take a classical but very different approach. First, usable measures of authenticity and an appropriate series of stimuli will be developed. Then, an experiment will be run using a between-subjects full factorial monadic design, with random assignment of respondents to the different cells. The experiment will be run as a post-test only, comparing test versus control cells.

As with any approach, there are inherent strengths and limitations to this approach. An experimental design was chosen because it allows for rigorous analysis of different treatments of certification. It also offers the strongest tests of potential interaction effects. In a well-known trade-off, this design will provide high levels of internal validity, but potentially lower levels of external validity. Specific steps have been taken to strengthen the external validity aspects of the experiment. The stimulus includes the use of a commonly-purchased New Zealand item, a greenstone (pounamu) necklace, which is a class of products that has relatively strong associations of authenticity. The certifications being manipulated are actual commercial endorsement programmes, including country of origin (New Zealand Made) and ethnicity-based (toi iho™) certification. The use of commercial certification programmes will increase the external validity of the experiment.
In this study, several antecedents of authenticity are examined. Types of certification and product age are manipulated, and social identity and category expertise are measured. The effects of these antecedents on authenticity will be measured. This should provide a reliable measure of the effects of these particular variables, but it is not intended to measure all the antecedents of authenticity. Many antecedents of authenticity are very context-specific, and these have been less emphasised in this research. The work here attempts to identify broader concepts which may prove relevant across many different contexts.

In addition to testing the antecedents of authenticity, there is the opportunity to measure some of the consequences of this concept. As perceptions of authenticity vary, it is possible to assess whether these perceptions affect product liking, perceived quality, perceived value, and purchase intent. Finally, an understanding of basic interaction effects will be developed.

Because this is an experimental design, the concepts under study, and how they will be operationalised, must be determined a priori. A series of research hypotheses is developed below. Outcome variables to be measured include general authenticity, product liking, perceived value, and purchase intent. Authenticity is modelled as a mediator, and the other variables are treated as outcomes or consequences of authenticity, in combination with some direct effects of the antecedents. A range of covariates is also measured, including pre-existing familiarity with the certification marks, cultural orientation towards Maori, and demographic information.

5.3. Included and omitted constructs

A general model of antecedents and outcomes of authenticity does not yet exist. Although we are gaining a good conceptual understanding of authenticity from qualitative research, there is limited work which attempts to measure or generalise these ideas using a quantitative approach.

The main purpose of this research is to understand the effects of certification on perceptions of authenticity, and the outcomes of those effects. A full model of all the antecedents of authenticity is a worthy goal, but has not yet been attempted other
researchers, and it is not an objective here. This work follows the approach of the majority of authenticity research, and attempts to explicate some, but not all, of the major effects which drive perceptions around authenticity.

The conceptual model includes four constructs, two related to the individual respondent, and two related to the object being considered by the respondent. It was decided to test two constructs which have not been studied previously in this context: certification (an object-related factor) and social identity (an individual-related factor). For comparison, these two untested antecedents were paired with two other which are well-supported in the research: object age (an object-related factor) and consumer expertise (an individual-related factor). This allows a comparison between known relationships and previously untested relationships.

These choices are not meant to suggest that other factors are not antecedents of authenticity: there are certainly a range of other factors which could have been included. Self-identity is another choice which could have been made, and which would be likely to affect perceptions of authenticity. Self-identity is a complex and multidimensional construct, and there is not complete agreement on what it entails. Effective operationalization of self-identity is limited, and related research in marketing has slowed in this area.

Because of the complexity of the construct, and the lack of agreement about how to measure it, self-identity was omitted, and the related concept of social identity substituted. Based on previous research, it is plausible to assume that greenstone can be used by individuals as a symbol of social identity, and that symbolism could affect authenticity perceptions. Social identity is conceptually simpler to operationalize than self-concept: people inherently understand the extent to which they are members of various groups. Measuring an individual’s extent of affiliation with a group can be accomplished in a straightforward way by eliciting their level of agreement with statements which reflect the values of the group. There is a solid body of research in this area, and accepted approaches and modifications of previously-used scales were employed for this research. All of these factors make social identity a useful choice for this research.
Finally, it should be noted that the inclusion of social identity does not imply that self-identity is inapplicable in this context: it would be a good candidate for future research. The preponderance of existing research indicates that all people have multiple selves, including a plastic self-identity and multiple social identities. The salience of these different identities is changed by contextual factors, and multiple aspects of self- and social identity often operate in tandem. The approach taken here was to prime social identity to make it more salient, potentially affecting perceptions of authenticity. This does not suggest that self-identity is not relevant in perception of authenticity or consumption behaviours. The inclusion of social identity was one choice made to circumscribe the research. Non-inclusion of other variables is not meant to be a refutation of other options.

5.4. Research hypotheses

This research is framed with a series of hypotheses. Two of these proposed relationships (certification and priming social identity) are newly suggested, and the other two (perceived age and expertise) have not been definitively tested in the context of authenticity. The hypotheses are based on the relevant literature on authenticity (reviewed in Chapter 2) and certification (Chapter 3), as well as original exploratory research (Chapter 4). A general model of the relationships as assessed in Study 2 is presented below.
Figure 5-1: A general model of antecedents and outcomes of authenticity

This research took an iterative approach, and insights from Study 1 were later incorporated into a larger model for Study 2. As a result, the model from Study 1 will nest within the broader model used for Study 2. Hypotheses in this chapter are presented in the form used in the main Study 2, which is the more complex study. Specific differences between Study 1 and Study 2 are detailed in Chapter 6, section 6.7.
5.5. General antecedents of perceived authenticity

In previous research, authenticity has been treated as a categorical variable (Grayson and Martinec 2004). This research assumes that authenticity is a nuanced construct which can be measured as a continuous variable, and that respondents can reliably rate their perceptions of the authenticity of an object. This approach has not been seen in previously published research, and hence is believed to be a contribution of this thesis. The hypotheses which follow suggest that the intrinsic and extrinsic properties of an object can increase, or decrease, the perceived authenticity of that object.

The proposed model assesses both extrinsic and intrinsic factors. Two object-related characteristics are included as antecedents of authenticity. One characteristic is wholly extrinsic to the object, the presence or absence of certification. The other object-related property is the individual’s perception of object age, which is a judgement about an intrinsic property of the object.

Authenticity is a perception which an observer projects onto an object, and it clearly is not an objective attribute of an object. Nonetheless, prior research has found that object-related attributes are associated with authenticity. Beverland (2005), for example, has found that authentic wines are associated with object-related attributes including heritage and pedigree, stylistic consistency, a relationship to place, as well as others. Such attributes of an item are signals, of varying strength and veracity, which can indicate the authenticity of that item. Individuals can recognise and interpret such signals, and they are often multidimensional. These same attributes may also signal a variety of other perceptions beyond authenticity, such as price expectations, the type of store where an item might be sold, whether it is likely to appeal to an individual’s taste, and so on.
Drawing upon this general rationale, it is suggested that object attributes can be antecedents of authenticity. Salient properties such as object age or iconic design are clearly helpful in creating perceptions of authenticity. Other attributes may have little relevance to creating perceptions of authenticity, however.

The model also considers two factors related to the individual’s self-perception: perceived social identity, and perceived expertise with the product category. Taken together, these factors (in conjunction with other object- and context-related variables) are believed to affect perceptions of authenticity.

5.6. Object attributes: effects of certification

Salient attributes of objects can help create perceptions of authenticity, similar to the ways in which warranties help create perceptions of quality and reliability. It logically follows that anything which heightens awareness of those salient properties could also increase perceptions of authenticity. In particular, certification is expected to operate in this manner. By warranting that a relevant attribute exists, it can simultaneously increase both the awareness and perceived salience of an attribute. This, in turn, will drive stronger perceptions of authenticity. Hence:

**H1: Certification will have a positive direct effect on perceived authenticity.**

Certification is a trustworthy source of information, comparable to recommendations by a friend or salesperson (Parkinson 1975). It can serve as an endorsement (McCracken 1989) and an as type of implicit warranty about the properties of an object. Warranties are known to be persuasive (Kendall and Russ 1975), and to reduce perceptions of risk (Shimp and Bearden 1982). All of these factors indicate that certification is a highly credible source of information, and certification which warrants that an object has authentic properties should increase its perceived authenticity.

5.6.1. Effects of differing certifications

Types of certification vary widely, and they are not all equally effective. A certification which is highly consistent with the certified object will appear more
salient and credible. Sujan and Bettman (1989) found that adding new information which was less discrepant (i.e., more compatible) with a pre-existing schema is more likely to be incorporated into that schema. Adding this new tag of information to an existing schema is an easier, less demanding cognitive process than creating a highly modified or new schema, and is probably more likely to occur. This implies that a compatible certification may be processed more easily, and remembered better, than a discrepant certification. If this is so, the compatible certification should be more effective at changing consumer perceptions.

The effects of compatibility are generalisable, but it can only be operationalised in a specific context. In the context employed for this research, three different certification marks (toi iho™, New Zealand Made, and Made with Care) plus an uncertified control were used as stimuli in Study 1. Based on the results from Study 1, Study 2 simplified the design and omitted the Made with Care certification. The different certifications were not expected to have identical effects. The toi iho™ mark is highly appropriate for a handmade Maori-style necklace, as it was developed to certify similar handmade Maori items. The toi iho™ mark also adds information that is usually not known as a certainty (the fact that this carving was, in fact, produced by Maori, and is not a foreign knock-off).

The New Zealand Made mark is commonly used on mass-produced items, and is not used on small production craftworks. Because the New Zealand Made mark has been used for many years, we can assume that the respondent pool has at least some familiarity with how the mark is used, and would probably view it as less compatible with a handmade Maori item. Furthermore, it would seem to add less information than the toi iho™ mark™. New Zealand-based potential purchasers could logically assume that a Maori-style greenstone carving being sold through a reputable website should be made in New Zealand (even though this assumption may be incorrect). To the extent that the New Zealand Made mark simply reinforces an existing perception, rather than adding new information, it adds little new to the decision calculus. Under these circumstances, we could expect it to be a less effective certification in this context.
Based on these differences in the appropriateness of certification marks for this object, it is proposed that:

**H1a:** Items certified as toi iho™ will be rated as more authentic than items certified as New Zealand Made.

**H1b:** Items certified as toi iho™ will be rated as more authentic than items which are not certified.

**H1c:** Items certified as New Zealand Made will be rated as more authentic than items which are not certified.

These hypotheses employ specific, narrow stimuli as the means to explore two general concerns. First, they test whether certification does increase perceptions of authenticity, and second, they determine if different certifications have different perceptual effects. The exact value of each certification mark is not of theoretical interest (though it does have managerial relevance). These specific marks were simply used to operationalise different types of certification, and a different set of marks would be used in a different research context.

### 5.7. Object attributes: effects of perceived age

A large body of work suggests that greater perceived age is commonly associated with perceptions of authenticity. Cohen (1988) and Salamandra (2004) found that perceptions of the authentic shift with the passage of time. Other examples of the effect of perceived age include Arnould and Price (2000) who considered the issue of time and authenticity in re-enactment, and Brown, Kozinets and Sherry (2003), who equate old with authentic in the area of nostalgia. In all of this work, being older is generally associated with being more authentic. In this research, general perceptions of age were measured rather than actual numerical assessments. This approach smoothed out cultural differences in judgments about the meaning of age.

Drawing upon this work, Hypothesis 2 suggests:

**H2:** Perceived product age will have a positive direct effect on perceived authenticity.
5.8. Individual factors: effects of social identity

Social identity is an important construct with many perceptual effects (reviewed in Sinnott 2006). It is known that perceived social identity influences consumer decisions (Childers and Rao 1992). It is proposed here that, under certain conditions, an individual’s social identity will also affect his perceptions of the authenticity of an object. Specifically, if an individual perceives the nature of an object to be compatible with his social identity, he will judge that object to be more authentic than would otherwise be the case.

The characteristics of objects can add distinctiveness in such a way that it creates identity-like qualities. These characteristics may be related to country of origin, style, appearance, brand name, or other attributes. The compatible object becomes, to some extent, an exemplar or symbol of aspects of an individual’s social identity. A brief review of relevant literature on social identity is presented below, as rationale for the hypotheses related to social identity.

5.8.1. Identity theory, social identity theory, and self-categorisation theory

Identity theory (Stryker 1968) was developed in sociology, and operates primarily in the domain of individual behaviour and the private self, giving special consideration of the roles which people may play in social circumstances. Social identity theory (Tajfel and Turner 1979) is a later approach from social psychology, and is more group-focused. Social identity theory suggests that people develop a self-concept as a result of their connections (or lack of connections) to particular social groups, and this helps them create and perceive their own place in the social order. Social identity is not the same as personal identity, and it builds self-esteem by associating the individual with favourably-perceived ingroup which he or she can view as superior to the outgroups.

Self-categorisation theory (Turner 1985) was an extension of social identification theory which helps provide more detailed explanations of the outcomes of identifying with a particular social group. As individuals identify more closely with the ingroup, they undergo a process of depersonalisation, in which they begin to
reflect the relevant prototype of the group rather than their prior, more individuated identities (Hogg and Terry 2000). Turner also emphasises that individuals can take on a range of different identities, and these can easily become salient (Transue 2007).

As individuals depersonalise and change their self-perception and behaviour to conform to the relevant group prototype, this transformation can produce "normative behaviour, stereotyping, ethnocentrism, positive ingroup attitudes and cohesion, cooperation and altruism, emotional contagion and empathy, collective behaviour, shared norms, and mutual influence" (Hogg and Terry 2000, p. 123). Several of these attitudinal and behavioural shifts could be seen as relevant to the wearing of pounamu as a shared group norm.

Social identity theory has been expanded to consider how individuals, in their roles as customers, develop identification with the companies which serve them (Bhattacharya and Sen 2003). A narrower version of this approach, considering customer-brand relationship as the research domain, was suggested by Lam et al. (2010). This research proposes that social identity theory can be applied at the product category level, which is at a broader and more abstract level than prior research. This approach does not preclude customer-company or customer-brand relationships, but it does suggest that a product or service categories may have a general effect on social identity, regardless of their branding.
Taken together, prior research on social identity suggests that:

**H3: Social identity which is consistent with the nature of an item will have a positive direct effect on the perceived authenticity of that item.**

### 5.8.2. Effects of priming social identity

No directly relevant research has been found which primes social identity in a consumption context. However, research into priming social identity in social psychology (Brewer and Gardner 1996; Hall and Crisp 2008) and economic psychology (McLeish and Oxoby 2011) has found reasonably robust effects from priming social identity. This research found that priming social identity has the effect of making social identity more salient. When social identity becomes more salient, individuals identify more strongly with the ingroup, feel more detached from the outgroup, and cooperate and agree more with other members of the ingroup. Broadly speaking, primed individuals adhere more closely to group norms.

These findings appear relevant to consumption of *pounamu*, which can be seen as a group-related symbol. We can reasonably assume that most people feel their own self concept is authentic. If this is true, then objects which are consistent with or symbolic of that self-concept are also likely to be judged as authentic. A stronger sense of social identity should lead directly to a stronger sense of congruence or identification with an object that is congruent with that identity. This, in turn, may increase positive affect towards the object, and increase various positive perceptions, including authenticity. (This mode of action also suggests that there should be a direct effect of social identity on the outcome variables related to the object. These are explored in later hypotheses.)
Therefore, an additional effect of social identity can be suggested:

**P3a: Priming social identity which is consistent with the nature of an item will increase the perceived authenticity of that item.**

Based on the rationale above, priming social identity should further increase its effects on authenticity. Priming will have the general effect of increasing both the level of perceived social identity, as well as the salience of social identity in the context of a congruent object. If social identity is an antecedent of authenticity, then priming this concept should strengthen its effect on perceived authenticity.

### 5.9. Individual factors: effects of expertise

There is extensive research on experts versus novices in consumer behaviour. Bettman and Sujan (1987) found that nonexperts preferred to construct some explicit criterion before making a decision. Certification can help in the criterion-setting process, by making the certified attribute more accessible and salient. In essence, the certified attribute may become the criterion for decision making. Marketers certainly hope this is the case. For example, the International Women’s Garment Maker’s Union ran a media campaign for a number of years using the slogan “look for the union label.” The purpose of the campaign was to make the certification of union manufacture into a key decision criterion for purchase.

The direct effect of category expertise on perceptions of authenticity is straightforward: it allows an individual to bring a considerably richer amount of knowledge, understanding, and experience to the task of assessing an object. Because authenticity is largely socially constructed, this deeper reservoir of information and affect allows for a more comprehensive and nuanced perception of authenticity to be created. Hence:

**H4: Perceived expertise with the product category will have a positive direct effect on perceived authenticity.**
5.10. Direct effects: consequences of perceived authenticity

Authenticity is a very appealing concept which can have a range of associated properties such as veracity, the patina of history, the symbolic aspects of iconicity, and the psychologically captivating properties of indexicality. It is easy to develop a list of virtue-like properties commonly associated with authenticity, and difficult to find any real negatives. As a general principle, it is easy to suggest that stronger perceptions of authenticity of an object are likely to lead to more positive attitudes, and more favourable behavioural intentions, towards that object (Gilmore and Pine 2007). Hence, stronger perceptions of the authenticity of an object will lead to more positive perceptions of that object. Specifically:

H5: Perceived authenticity will have a positive direct effect on the liking of an object.

H6: Perceived authenticity will have a positive direct effect on the perceived quality of an object.

H7: Perceived authenticity will have a positive direct effect the perceived value of an object.

H8: Perceived authenticity will have a positive direct effect on the purchase intent for an object.

5.11. Interaction of certification with characteristics of products

In addition to direct effects, certification is also expected to interact with the characteristics of the product. In general, certification would be expected to have a direct effect on any certified attributes by increasing such properties as the perceived strength, salience, and veracity of the certified attribute. Interactions could occur between certification and other product attributes which are not specifically certified. One interaction of certification with product attributes is considered here, age x certification.
5.11.1. Interaction of age and certification

Perceived age is an important indicator of authenticity (Brown, Kozinets and Sherry 2003). When a certification is present, it will be seen as salient, and used as a major information source. In the absence of certification and the information it provides, consumers are expected to rely more on standard cues such as age. This should increase the effect of age in the absence of certification, and reduce it in the presence of certification. Hence:

**H9:** Perceived product age will have a stronger effect on perceptions of authenticity for uncertified items, and a weaker effect on perceptions of authenticity for certified items.

5.12. Interaction of certification with characteristics of respondents

In addition to direct effect on authenticity, and interaction effects with product characteristics, certification is also believed to interact with the characteristics of respondents. Two interactions of certification with respondent characteristics are considered here: social identity x certification and expertise x certification.

5.12.1. Interaction of social identity and certification

In the case of uncertified items, potential purchasers are faced with a lack of information. If no certification is present, consumers must make judgments on the basis of their pre-existing knowledge schemas. This will have the effect of making pre-existing knowledge more salient for the decision-making process. Social identity is a pre-existing schema which is known to affect purchase decisions, as reviewed in section 5.7 above. If there is a deficit in information because no certification is present, consumers will need to construct a purchase assessment which is based on other relevant pre-existing knowledge. Because the research stimulus is a symbol of national and/or ethnic identity, the decision maker’s social identity is salient for making that decision. Thus, social identity becomes more salient when certification is absent (throwing the decision maker into idiosyncratic
rationale-making). When certification is present, consumers will use this information instead, and social identity will be relatively less important. Therefore:

**H10:** Social identity will have a stronger positive effect on perceptions of authenticity for uncertified items, and a weaker positive effect for **certified items.** (Tested in Study 2 only.)

### 5.12.2. Interaction of expertise and certification

East (1992) examined differences between experts and novices in relation to referent groups. This research suggested that experts would rely more on their own opinions about the benefits of a purchase, and less on outside influences from referent groups. It seems logical to suggest that certification would play a stronger referent role for novices (who seek more outside information) than for experts (who rely on their own knowledge structure).

**H11:** Certification will have a stronger positive effect on perceptions of authenticity for less-experienced purchasers, and a weaker positive effect for more-experienced purchasers.

### 5.12.3. General direct effects of antecedents on outcome variables

It is expected that the effects of antecedent variables (certification, perceived age, social identity, and expertise) on the outcome variables (liking, quality, value, and purchase intent) will be partially mediated by authenticity. This suggests that results should show a strong direct effect of authenticity on the outcome variable, in combination with weaker direct effects of the antecedents. The relationships between the antecedents and the outcome variables are shown in the Figure 8-2 below, but have not been specifically hypothesised.
5.13. Summary of research hypotheses

Figure 5-2 below summarises the research hypotheses in a graphic form. These hypotheses will be tested in Study 1 and Study 2, which follow in Chapters 7 and 8.

Figure 5-2: Summary of research hypotheses
Table 5-1 below summarises all hypotheses in their full written form:

<table>
<thead>
<tr>
<th>Summary of Hypotheses</th>
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<tbody>
<tr>
<td><strong>H1:</strong> Certification will have a positive direct effect on perceived authenticity.</td>
</tr>
<tr>
<td><strong>H1a:</strong> Items certified as toi iho™ will be rated as more authentic than items certified as New Zealand Made.</td>
</tr>
<tr>
<td><strong>H1b:</strong> Items certified as toi iho™ will be rated as more authentic than items which are not certified.</td>
</tr>
<tr>
<td><strong>H1c:</strong> Items certified as New Zealand Made will be rated as more authentic than items which are not certified.</td>
</tr>
<tr>
<td><strong>H2:</strong> Perceived product age will have a positive direct effect on perceived authenticity.</td>
</tr>
<tr>
<td><strong>H3:</strong> Social identity which is consistent with the nature of an item will have a positive direct effect on the perceived authenticity of that item.</td>
</tr>
<tr>
<td><strong>P3a:</strong> Priming social identity which is consistent with the nature of an item will increase the perceived authenticity of that item.</td>
</tr>
<tr>
<td><strong>H4:</strong> Perceived expertise with the product category will have a positive direct effect on perceived authenticity.</td>
</tr>
<tr>
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</tr>
<tr>
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</tr>
<tr>
<td><strong>H7:</strong> Perceived authenticity will have a positive direct effect on the perceived value of an object.</td>
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</tr>
<tr>
<td><strong>H10:</strong> Social identity will have a stronger positive effect on perceptions of authenticity for uncertified items, and a weaker positive effect for certified items. (Study 2 only.)</td>
</tr>
<tr>
<td><strong>H11:</strong> Certification will have a stronger positive effect on perceptions of authenticity for less-experienced purchasers, and a weaker positive effect for more-experienced purchasers.</td>
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*Table 5-1: Summary of Hypotheses*
Chapter 6. Scale development approach

In order to execute the proposed experiment, a set of appropriate scales for measuring authenticity and other independent and dependent variables was developed. The broad techniques employed are similar to those recommended by Churchill (1979) and Nunally (1978), with additional perspective taken from Rossiter (2002). A careful sequence of steps was followed, beginning with gathering of general authenticity-related vocabulary from prior research, a lexical database, dictionaries, and thesauruses. This was followed by the use of co-word analysis to help assess the relationships among the authenticity descriptors.

The list of possible items was expanded with additional descriptors and informally tested on a small-scale basis. A set of descriptors for authenticity, and other independent and dependent variables, was operationalized into a web-based questionnaire using a seven point Likert-style scale. This questionnaire was used in a Study 1. A series of multiple item scales was developed using a summed-scale approach. Each scale was assessed for unidimensionality using exploratory factor analysis. Reliabilities were assessed with a standard Cronbach α measure. Following standard procedure, items which reduced the overall reliability of the scale were dropped until the overall reliability was optimized. The Cronbach's α was supplemented by a Pearson correlation coefficient for two item scales. Study 2 used modifications of the scales employed in Study 1. Identical procedures for scale purification an assessment were followed. Details of the process and the resulting scales follow below.
### Scale development steps

<table>
<thead>
<tr>
<th>Step</th>
<th>Process</th>
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<tbody>
<tr>
<td>2.</td>
<td>Assess relationship of terms: Co-word analysis of USPTO and WWW data using multidimensional scaling</td>
</tr>
<tr>
<td>3.</td>
<td>Generate additional context-specific items for IVs and DVs, including items for manipulation checks: Review literature and pre-existing scales for appropriate items</td>
</tr>
<tr>
<td>4.</td>
<td>Informal testing: Confirm intelligibility and face validity of questionnaire items with small convenience sample</td>
</tr>
<tr>
<td>5.</td>
<td>Study 1 data collection: Administer to student subjects (n = 203)</td>
</tr>
<tr>
<td>6.</td>
<td>Formal reliability analysis: Cronbach’s α used to purify scales; exploratory factor analysis run to confirm scale unidimensionality</td>
</tr>
<tr>
<td>7.</td>
<td>Fine-tune questionnaire: Added items and dropped items</td>
</tr>
<tr>
<td>8.</td>
<td>Study 2 data collection: Administer to market research panel (n = 1209)</td>
</tr>
<tr>
<td>9.</td>
<td>Formal reliability analysis: Cronbach’s α used to purify scales; exploratory factor analysis run to confirm scale unidimensionality</td>
</tr>
<tr>
<td>10.</td>
<td>Analysis: Scales used for manipulation check and final modelling</td>
</tr>
</tbody>
</table>

**Table 6-1: Steps in scale development**

#### 6.1. Descriptors of authenticity: how authenticity is lexicalised

Little previous work exists in the development of quantitative scales to measure the concept of authenticity. For this reason, it was necessary to begin scaling procedures by exploring the types of vocabulary which can effectively describe the concept of authenticity. Once the range of appropriate vocabulary was understood, development of formal scales was conducted.

This study assumed that concept of authenticity is related to, but not necessarily identical to, the words we use to describe it. “Although words depend on the existence of concepts, the inverse is not true: concepts can, and do, lead a life
independently of words (Fellbaum 1998, p. 8).” Greater conceptual clarity can be developed by working inductively, using known synonyms and descriptors as indicators of an underlying concept. By reviewing such related terms, it is possible to understand the range of ways that a given concept is lexicalised.

6.2. Exploration in the WordNet database

The scaling process began with an exploration of authenticity-related terms in the WordNet 3.0 database (Miller et al 1990). Standard dictionaries organize words alphabetically, which can result in words of similar meanings being scattered haphazardly. WordNet is an ongoing academic research project designed to organize words on the basis of their underlying conceptual meanings, rather than their spelling. The WordNet database is organized around psycholinguistic principles, and consists of a lexical database which was developed to be a comprehensive set of semantic relationships.

A range of terms related to authenticity were searched in the WordNet database, including authentic, authenticity, inauthentic and authenticate. Subsequent searches were carried out on synonyms for these terms. The searches revealed that the authenticity construct is moderately complex in linguistic terms. It is a polysemous word with more than one sense, with a range of synonyms of similar meaning, and antonyms with opposite meanings. The noun form (authenticity) was found to have no hyponyms (words of subordinate meaning, as oak and tree) and no meronyms (words indicating being a component part, as locomotive and train). Similarly, the verb form (authenticate) was essentially unidimensional.

The WordNet database contained only four synonyms for authentic: reliable, bona fide, unquestionable, and veritable, and a further two synonyms for authenticity: genuineness and legitimacy. Antonyms were limited to inauthentic and unauthentic. These limited findings are not surprising. Although WordNet is rigorously designed on psycholinguistic principles, it is somewhat limited in scope, comprising 117,000 sets of synonyms, roughly half the size of the Oxford English Dictionary.
6.3. Confirmation with the Oxford English Dictionary

A broader concern is the fact that the short list of WordNet synonyms for *authentic* omits the range of nuance which is been uncovered in prior research. The Oxford English Dictionary is widely considered to be a definitive source, and it has been found to be very valuable for “settling issues of word use or sense priority” (Miller et al. 1990, p. 236). A cross-check with the Oxford English Dictionary (1989) confirmed the impression that the WordNet synonyms appeared to be somewhat tangential to the underlying idea of authenticity. Only two of the six WordNet synonyms appeared in the Oxford English Dictionary definitions: *reliable*, and *genuine* (taken as equivalent to *genuineness*). Furthermore, at least two of the terms (*veritable* and *bona fide*) are arguably uncommon in popular usage, and therefore less appropriate for scale development. A wider search for appropriate vocabulary was necessary.

6.4. Vocabulary from prior research

Prior research across many fields was examined, and it is apparent that the authenticity concept has been lexicalised using a fairly broad range of terms. Drawing on the range of prior research reviewed in Chapter 2, an initial list of 13 key descriptors was developed: *authentic, authenticity, original, real, certified, genuine, authorised, vintage, guaranteed, true, classic, licensed, and historic*. At this stage, terms to describe specific types of authenticity (*iconic, indexical, expressive* and so on) were not specifically sought. However, some of the terms chosen do relate, to a greater or lesser degree, to specific types of authenticity.

This list was judged to provide a workable initial range of authenticity-related vocabulary. However, it offers no indications of the strength of association between individual descriptors and the underlying concept. To better understand which words are more- and less-associated with the authenticity concept, a co-word analysis was conducted to determine the frequency of these words, and their co-occurrences, in commercial discourse.
6.5. Methodological approach

This approach is a novel application of existing techniques. It differs from prior work in three main ways: context (scale development), combination of techniques (co-word analysis in conjunction with multidimensional scaling), and data sources (web-based data showing commercial and individual language usage). No directly comparable application of these combined techniques to scale development has been found in marketing or any other field.

6.5.1. Similar approaches

There is extensive work on the structure of knowledge using co-word analysis. The technique was originally developed (Callon, Courtiale, Laville 1991) to map particular scientific research domains, including interactions between academic and applied technical research. It has been widely applied to discover patterns and trends in scientific research and patents. However, there has been little application of this technique in the marketing or consumer behaviour fields.

The closest analogues in the marketing literature are studies done on the structure of knowledge. Leong (1989) conducted a descriptive analysis of citations in the Journal of Consumer Research (“JCR”). This study considered co-citations between JCR and other key journals, and tabulated the outcome as a contingency table and percentages. Multidimensional techniques were not used. Baumgartner and Pieters (2003) developed a measure of the structural influence of marketing journals based on co-citation analysis. Using a similar technique to Leong (1989), they computed the share of co-citations received by each journal as a measure of importance. In addition, a cluster analysis was conducted to indicate which journals were most closely conceptually related.

Co-word and social network analysis techniques were used to explore the evolution of the linguistic and conceptual understanding of the construct of strategy (Ronda-Pupo and Guerras-Martin 2011) as discussed in the strategic literature over a 46 year time period. This work is similar to the work presented here in the sense that it explores a single multidimensional construct, and pairs a contingency table approach with a multidimensional analysis. It differs from the current study because
it uses a smaller sample (n=91) of academic publications as a sampling frame, is longitudinal in nature, and was not used for scale development purposes.

6.6. Authenticity in commercial speech: United States trademarks

Co-word analysis requires development of a full contingency table from a coherent data source. As a proxy for commercial speech, the United States Trademark and Patent Office (USPTO) database was used as a sampling frame. This database contains all U.S.-registered trademarks, along with a description of the language and basic claims to which the trademark holder is asserting copyright. The trademark holder typically registers all important verbal descriptors related to the trademark itself. To a greater or lesser extent, the trademark owner gains control over these descriptors of the product or service, including designated features, benefits, and image-related vocabulary. Thus, this database becomes a rich source of the vocabulary and claims which companies believe are most salient to their products and services.

The unit of analysis was individual trademark records. Initially, a targeted search for each of the individual authenticity descriptors was conducted using the dedicated search engine within the online USPTO trademark database. The frequency of occurrence of each descriptor was recorded.

As a second step, the USPTO search engine was used to conduct a Boolean search for authenticity-related word pairs which appeared within the same trademark listing. The frequency of word pair co-occurrence was also tabulated following standard co-word analysis protocols (Callon, Courtiale and Laville 1991). When a pair of words occurs within the same record, they are considered coincident and are counted. The total frequency of a word pair co-occurrence is a metric measure of their proximity or similarity. The words original and authentic occur in combination 56 times, for example. The entire correspondence table of word pairs was constructed, and a symmetrical data matrix (below) was developed.
Table 6.2: Co-occurrences of authenticity descriptors in the USPTO database

6.7. Multidimensional scaling of USPTO data

The contingency table presents the bivariate relationships between any two authenticity descriptors. Some studies (e.g., Leong 1989) conclude this type of analysis with univariate statistical descriptions of the contingency table. However, without further analysis, it does not show how these descriptors interrelate in a multivariate space. To reveal these relationships, this data was used with the metric ALSCAL multidimensional scaling procedure to map the relative position of the descriptors in a two-dimensional solution. When an initial MDS solution was developed, the terms *authorised* and *certified* mapped as outliers, which compressed the remainder of descriptors into a tight cluster. To develop a more meaningful solution, the outliers were removed and a new 11 item solution was calculated, yielding an $r^2 = .583$ and Young's S-stress = .448. The key ideas of *authentic*, *authenticity*, and *genuine* map closely together, and centrally, lending credibility to the results. More legalistic concepts (*licensed*, *true*, and *authorised*) are relatively close together, but separated from the main descriptors. The term *real* is an outlier on this map. This is driven by the fact that *real* has two primary meanings in the database: one meaning related to genuineness and authenticity, and the other meaning related to real estate. The second meaning causes the term to map more distantly than the more unidimensional terms. It is also notable that terms more conceptually related to certification, including *licensed* and *guaranteed*, map at the periphery.

<table>
<thead>
<tr>
<th>Authentic</th>
<th>Original</th>
<th>Real</th>
<th>Certified</th>
<th>Guaranteed</th>
<th>True</th>
<th>Classic</th>
<th>Authorized</th>
<th>Vintage</th>
<th>Authenticity</th>
<th>Historic</th>
<th>Total Pairs</th>
<th>Total Instances</th>
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<td>21</td>
<td>56</td>
<td>230</td>
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**Table 6-2: Co-occurrences of authenticity descriptors in the USPTO database**
6.8. Multidimensional scaling of World Wide Web data

A similar co-word analysis approach was employed using the entire World Wide Web as a sampling frame. In this case, individual webpages were the unit of analysis. The analytical approach taken here is very similar to the USPTO data, but there are underlying differences in what it represents. The patent database is restricted to commercial speech, whereas the WWW inherently contains a mixture of commercial and individual speech. The WWW data is a general measure of association within the same webpage. This does not strictly guarantee that the two descriptors are used in close proximity, or that they are necessarily conceptually linked in the text of the webpage.

However, this is very similar to the type of association measured in commonly used co-citation analyses of academic research. A co-citation indicates only that one author has referred to another's work. It does not indicate whether the citation is favourable or unfavourable, or extensive or cursory. In all of these analyses we make the basic and reasonable assumption that stronger association across the entire sample implies a stronger conceptual linkage. In the case of the WWW analysis, a
spot check of a number of co-word occurrences confirmed that the word pairs are, on average, reasonably conceptually related. These results are considered sufficient for exploratory research.

6.8.1. Methodology

Data on word pair co-occurrences was collected using Google, the most commonly used web search engine. There are valid concerns about using commercial search technologies for data collection. One key issue, the use of proprietary algorithms to order search results, was nullified by using total frequencies of co-occurrence, and ignoring relative rankings. We proceeded on the assumption that this data has good internal validity: it is an accurate representation of the WWW as mapped by Google. The external validity of this data (how closely it actually corresponds to the full WWW) is not known. Reasonably similar results were obtained in trial iterations with other search engines, including Yahoo and AltaVista. This data is believed to be sufficiently accurate for exploratory research, particularly since this work will be confirmed by more stringent techniques.

The World Wide Web descriptor list

The descriptor list was slightly modified based on empirical results from the USPTO analysis, linguistic concerns, the structure of the data acquired from the World Wide Web, and additional insights from the literature. Four items were dropped from the USPTO descriptor list. Authenticity was dropped because it was uncommonly used, and less applicable in most contexts than the conceptually identical adjectival form authentic. Three other terms were dropped because they have multiple meanings which cause validity concerns in this unspecified context, and reliability concerns in operationalisation. Original was omitted because it implies creative or unique, which can contradict with some forms of authenticity. Many authentic items are not necessarily creative, and can exist in large quantities. Real was dropped because it is commonly used to refer to real estate, which distorts the analysis. Vintage was omitted because it is commonly used in the context of wine. In this context it can mean simply year of production, without any particular implications of authenticity attached to the term.
Three items were added: *legitimate*, *proper*, and *traditional*. *Traditional* was added based on work by Chhabra (2005), which found that 44% of vendors selling Scottish-themed goods in North America defined authenticity as a representation of Scottish traditions.

The full contingency table is presented below:

<table>
<thead>
<tr>
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<th>real</th>
<th>old</th>
<th>true</th>
<th>traditional</th>
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<th>legacy</th>
<th>trust</th>
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<tr>
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<td>13400000</td>
<td>46400000</td>
<td>18700000</td>
<td>45000000</td>
<td>39600000</td>
</tr>
</tbody>
</table>

Table 6-3: Co-occurrences of authenticity descriptors in the World Wide Web
6.8.2. Multidimensional scaling of World Wide Web data

A 14 item solution was calculated from the Web data, yielding an $r^2 = .478$ and Young’s S-stress = .574. As with the USPTO data, the general authenticity concept appears to be in the centre of the map, reconfirming that this is a central construct. More tangential descriptors map at the periphery.

![Multidimensional scaling map of World Wide Web authenticity data](image)

6.9. Questionnaire development

The initial analysis described above focused on 14 items which covered the general authenticity concept, with some nuances of age (*historic, retro, classic, traditional*) and certification (*licensed, authorised, certified*). For scaling purposes, there was a need to expand this list significantly, to include additional concepts included in the experiment, and to allow for development and testing of multiple measures. A broad set of 56 items was generated to measure authenticity, as well as other independent and dependent variables. The authenticity-related questions included general, non-contextual questions (e.g., *authentic, genuine, counterfeit* (reversed)) as well as a range of questions developed for this specific experimental context (e.g.
made by a Maori carver, carved with traditional techniques). Items were also generated to measure the dependent variables of liking, quality, value, and purchase intent. Items to serve as manipulation checks were developed for toi iho and New Zealand Made certifications, as well as for item age. Several measures of familiarity with greenstone were also inserted to develop a scale for Greenstone expertise. A broad range of items was included to allow for some redundancy, so that items which proved unreliable could be dropped. An additional 16 demographically-related questions were also asked. The full list of attitudinal and behavioural items for Study 1, including items dropped based upon initial pretesting, is included below.

6.10. Items tested in Study 1

All items were preceded by the first part of a statement (e.g., “This fishhook carving is：“), followed by the short items below. All answers (except demographics and willingness to pay) were recorded on a uniform 7 point Likert-style scale anchored as “Strongly Disagree” and “Strongly Agree.” Items were randomised in the final questionnaire to avoid any potential order bias.

Overall authenticity
- authentic
- real
- genuine
- original
- fake (reversed)
- a copy: (reversed)
- counterfeit: (reversed)

Indexicality — a temporal- spatial link to an original source
- a true piece of New Zealand
- made by a Maori carver
- made of the right material
- carved with traditional techniques
- historic
- new
- old
- classic
- made by pakeha (reversed)
- made in New Zealand
- Made by Maori
- recently made
- made offshore
- antique
- genuinely Maori
- is made of genuine New Zealand greenstone
- is made of Asian greenstone (reversed)

**Iconicity – looks original**
- is a typical design
- is the proper colour
- a traditional style
- is a nice example
- This carving looks original

**Affect and likability**
- I like this carving
- something I would wear
- attractive
- ugly
- elegant

**Quality (includes expressive authenticity)**
- of high quality
- unique
- an inspired piece
- kind of boring
- I would buy this for a gift.
- has fine workmanship
- I would be proud to own this carving

**Value perceptions and Purchase intent**
- This is an expensive item.
- This is a cheap item.
- I would expect to pay $____ [drop down box]
- I would buy this carving
- This carving is worth quite a bit
- cheaply made
- carefully made

**Certification**
- is guaranteed to be real
- is authenticated
- is authorised
- is certified as “Toi Iho Maori Made”
- is certified as “New Zealand Made”
- is certified as “Made with Care”
**Greenstone and cultural expertise**
- I have bought greenstone (*pounamu*) in the past.
- I like greenstone carvings.
- I know a lot about greenstone (*pounamu*).
- I often wear greenstone (*pounamu*) myself.
- I feel close to Maori culture.
- I understand Maori customs and traditions (kaupapa Maori).
- I am a very traditional person.
- I am a very modern person.

**General attributes**
- suitable for a man
- suitable for a woman

**Certification awareness**
- I know of the “Toi Iho Maori Made” brand
- I know of the “New Zealand Made” brand
- I know of the “Made with Care” brand

**Demographic items**
- Age
- Educational attainment
- Primary ethnicity
- Major city, provincial centre, small town, rural residence

Several items were omitted based initial pretesting. These items were because they were seen as excessively redundant, lacked clarity, or were conceptually inappropriate. The items omitted from Study 1 were:
- looks traditional
- is well-made
- is true to Maori culture
- is made of good materials
- has good attention to detail
- is mass-produced
- I would be proud to give this as a gift
- I would give this as a gift.
6.10.1. Study 1 survey administration

The questionnaire was programmed in Survey Monkey software to be administered anonymously over the Internet. The experimental stimulus included a photograph of a greenstone fishhook carving accompanied by a verbal description which embodied an experimental manipulation (e.g., the carving was described as old or new, toi iho or New Zealand made or not certified). The questionnaire followed immediately after the visual stimulus.

All questions were scaled on a seven point Likert-style scale, anchored as strongly disagree at the low end and strongly agree at the high end. Questions were generally asked with a single preceding phrase ("This fishhook carving is:"), followed by a series of short 1-7 word descriptors (such as Authentic, Genuine, Original, Fake). A small-scale pretest was conducted prior to Study 1 which indicated that respondents understood the questioning format, and could answer it easily. Based on this input, Study 1 was administered.

6.11. Procedures for assessment of reliability: Study 1

6.11.1. Respondents

Study 1 was conducted with a convenience sample of undergraduate students from The University of Auckland. Total sample size was 203 students who completed the study, with a median age of 21 years. The gender split was 62.1% female and 37.9% male. The ethnicity of the sample was international, reflective of the student body. 37.9% of respondents identified themselves as New Zealand European war New Zealand (unspecified), with another 8.7% identifying themselves as European. Other ethnicities included 16.9% Chinese, 12.8% Indian, 10.8% other Asian, 3.0% Pacific Islander, 1.0% Maori, and 8.9% other ethnicities. All reliability tests were completed on the total sample.

Scale development for both Studies 1 and 2 used three key measures: Cronbach’s α as a measure of scale reliability, exploratory factor analysis as a measure of scale
unidimensionality for scales with three or more items, and Pearson’s $r$ as a supplementary reliability measure for two-item scales. Their usage is detailed below.

6.11.2. Use of Cronbach’s $\alpha$ and Pearson’s $r$

Cronbach’s $\alpha$ (Cronbach 1951) is a key statistic which measures the internal consistency of items within a scale. This is generally referred to as reliability, which Nunnally (1967) defined as the extent to which measurements are repeatable. The statistic is large when there is a high degree of communality between items (which is equivalent to a low degree of item uniqueness). Cronbach’s $\alpha$ is generally defined as the mean of all split-half reliabilities, but this definition is strictly true only if the standard deviations of individual items are equal. If the standard deviations are not equal, then Cronbach’s $\alpha$ is a conservative measure, and it will underestimate reliability under these conditions (Cortina 1996).

In the scales which follow, differences in standard deviations for individual items are generally within 0.2 points on a 7 point scale, which should not have a material impact on reliability as measured by $\alpha$. All scales exceed Nunnally’s (1967) heuristic that a reliability of .70 or greater is generally sufficient. For 2 item scales, the Pearson’s $r$ measuring the correlation between the two items is also presented. In the case of a two item scale, the Pearson’s $r$ is identical to the item-total correlation, and is a more conservative measure than the Cronbach’s $\alpha$.

6.11.3. Scale unidimensionality

Reliability statistics measure repeatability, but they do not measure homogeneity or unidimensionality. Unidimensionality generally requires a high degree of reliability, but the inverse is not true. It is possible to have high reliabilities for a scale composed of several correlated measures of a multidimensional construct. For the analyses presented here, unidimensionality is important, and it has been assessed with exploratory factor analyses for each proposed scale of 3 items or more. Three aspects of these factor analyses were considered. If the scale provides a) a single-factor solution (with an eigenvalue $\geq 1$), b) that single factor accounts for the majority of the variance, and c) the second largest factor explains a substantially
smaller proportion of the variance than the first factor, then the scale is judged to be sufficiently homogenous or unidimensional.

6.12. Study 1: the factor structure of authenticity

6.12.1. Prior factor analyses of authenticity

Revilla and Dodd (2003) conducted a factor analysis of authenticity-related data on Talavera pottery. This study demonstrates that characteristics of a local craft item can be effectively factor analyzed. Their largest derived factor was appearance/utility, followed by factors for traditional characteristics and certification, difficult to obtain, locally produced, and low-cost. There is a significant difference in methodology between their study and this one. Revilla and Dodd asked the question "I think that authentic Talavera is..." followed by a series of attributes, which essentially primes authenticity and asks which attributes contribute to it.

This research has taken a different approach: the stimuli present an object with no mentions of authenticity, and then measure the extent to which the object and manipulation create perceptions of authenticity. As a result, the two factor analyses show significant differences. The first general factor in this study is overall authenticity, accounting for 22.31% of the variance. Because Revilla and Dodd did not measure authenticity per se with scaled items, they do not have a directly comparable factor (although their second factor, traditional characteristics and certification, is conceptually related).

Prior research in management and social psychology has also conducted factor analyses on authentic leadership and authentic personalities. The studies confirm that authenticity can show a stable factor structure in other contexts.

6.12.2. Exploratory factor analysis: perceptions of authenticity

A first step in the scale analysis was to determine whether the responses were in accordance with expectations based on prior theory. The factors which were derived in this factor analysis do conform in large measure to prior theory. An exploratory
factor analysis was conducted of key measures of overall authenticity, iconic authenticity, and indexical authenticity. Principal components analysis with varimax rotation was used. All 203 observations were included in the analysis, based on an assumption that different stimuli may change the levels of perceived authenticity, but should not alter the underlying factor structure.

Four factors with eigenvalues greater than 1 were derived. A scree plot shows a point of inflection following the fourth principal component, and this further confirms the appropriateness of the four factor solution. Taken together, these four factors account for 64.87% of the variance in the items. Based on the scree plot alone, it is arguably possible to consider this as a five factor solution. The potential fifth factor accounted for just 5.5% of the variance explained pre-rotation, and the eigenvalue was considerably below 1 at .778. Accordingly, this fifth factor was not judged to be sufficiently large, or to offer substantial additional explanation, and was rejected.

![Figure 6-3: Rotated factor scree plot](image)

The rotated solution, shown below, closely approximates a simple factor structure (Thurstone 1948). With only one exception (the item “authenticity” itself),
each item loads heavily on a single factor, and much less so on the other structures. Factor loadings which are greater than 0.5 have been highlighted.

<table>
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<tr>
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</tr>
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<td>.761</td>
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</table>

Table 6-4: Rotated component matrix

6.12.3. Interpretation of factor analysis

Factor 1: overall authenticity

Factor 1 has heavy loadings for *authentic, genuine, made of the right material*, and heavy negative loadings for *fake* and *counterfeit*. This factor represents overall authenticity, which was an expected finding. With many correlated constructs, a strong general factor is common. After rotation, Factor 1 explained 22.31% of the variance.

Factor 2: indexical authenticity

Factor 2 has heavy loadings for *original, carved with traditional techniques, historic, an inspired piece*, and a heavy negative loading for *a typical design*. This factor
represents indexical authenticity, the extent to which an item has a spatial or
temporal connection to the source of authenticity. After rotation, Factor 2 explained
18.31% of the variance.

**Factor 3: oldness**

Factor 3 is quite unidimensional, with a heavy loading for *old*, and a heavy
negative loading for *new*. This factor is arguably an aspect of indexical authenticity,
but it loads separately in this analysis. This may be influenced by the fact that both
of the items, old and new, are prominently manipulated in the stimuli. After
rotation, Factor 3 explained 13.38% of the variance.

**Factor 4: iconic authenticity**

Factor 4 has heavy loadings for *a traditional style* and *a typical design*. This factor
represents iconic authenticity, the extent to which an item has a visual or design
connection to the source of authenticity. After rotation, Factor 4 explained 10.87% of
the variance.

The exploratory factor analysis indicates that there is a coherent and logical four
factor structure underlying the questionnaire items. After rotation, the four factors
together accounted for 64.87% of the variance explained. Furthermore, these four
factors are interpretable, and conform to expectations from prior theory. Thus, these
findings provided the confidence to refine a series of scales for measuring
authenticity.

**6.12.4. Study 1: antecedents, mediator, and outcome variables**

Scales for Study 1 were developed to measure all variables included in the
experiment. The model hypothesises that authenticity functions as a mediator
between antecedent variables (certification, item age and expertise) and outcome
variables (liking, perceived quality, perceived value, and purchase intent). This is
hypothesised as a partially-mediated relationship (Baron and Kenney 1986): the
mediated effects of the antecedents on the outcome variable are stronger than the
direct effects, but both types of effects may occur.
6.13. Study 1: scale development summary

A range of scales have been developed for analysis. These scales are largely original. Seven have been developed as dependent variables: authenticity (in two versions), inauthenticity, liking (in two versions), value perception, purchase intent, perceived quality, and greenstone expertise. Five more scales are used for manipulation checks: newness, oldness, toi iho™, New Zealand Made, and Made with Care. The table below summarises reliability statistics. Specific details on each scale are presented in further sections.
Table 6-5: Reliability statistics for Study 1

<table>
<thead>
<tr>
<th>Scale name</th>
<th>Number of Items</th>
<th>Cronbach’s α</th>
<th>Pearson’s r</th>
<th>Mean</th>
<th>s.d.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authenticity- 5 items</td>
<td>5</td>
<td>.886</td>
<td>—</td>
<td>4.90</td>
<td>1.12</td>
</tr>
<tr>
<td>Authenticity – 3 items</td>
<td>3</td>
<td>.861</td>
<td>—</td>
<td>4.85</td>
<td>1.17</td>
</tr>
<tr>
<td>Liking – 9 item</td>
<td>9</td>
<td>.897</td>
<td>—</td>
<td>3.32</td>
<td>1.09</td>
</tr>
<tr>
<td>Liking – 2 item</td>
<td>2</td>
<td>.880</td>
<td>.788</td>
<td>3.96</td>
<td>1.40</td>
</tr>
<tr>
<td>Value Perception</td>
<td>2</td>
<td>.831</td>
<td>.711</td>
<td>3.78</td>
<td>1.27</td>
</tr>
<tr>
<td>Purchase Intent</td>
<td>2</td>
<td>.832</td>
<td>.717</td>
<td>3.66</td>
<td>1.55</td>
</tr>
<tr>
<td>Perceived Quality</td>
<td>5</td>
<td>.833</td>
<td>—</td>
<td>4.37</td>
<td>1.05</td>
</tr>
<tr>
<td>Greenstone expertise</td>
<td>4</td>
<td>.744</td>
<td>—</td>
<td>2.37</td>
<td>1.38</td>
</tr>
<tr>
<td>Inauthenticity</td>
<td>5</td>
<td>.816</td>
<td>—</td>
<td>3.05</td>
<td>1.24</td>
</tr>
<tr>
<td>Newness</td>
<td>3</td>
<td>.795</td>
<td>—</td>
<td>4.47</td>
<td>1.53</td>
</tr>
<tr>
<td>Oldness</td>
<td>4</td>
<td>.802</td>
<td>—</td>
<td>3.47</td>
<td>1.43</td>
</tr>
<tr>
<td>toi iho</td>
<td>4</td>
<td>.882</td>
<td>—</td>
<td>4.45</td>
<td>1.49</td>
</tr>
<tr>
<td>New Zealand Made</td>
<td>2</td>
<td>.869</td>
<td>.778</td>
<td>5.25</td>
<td>1.64</td>
</tr>
<tr>
<td>Made with Care</td>
<td>4</td>
<td>.774</td>
<td>—</td>
<td>4.63</td>
<td>1.11</td>
</tr>
</tbody>
</table>

6.13.1. Scale development: authenticity

An original scale to measure general authenticity was developed. The scale is designed to measure general perceptions of authenticity, the same aspects which appear as the first principal component in a factor analysis. Descriptors were based on commonly-used vocabulary related to authenticity as measured in the exploratory studies. All items were measured with a seven point Likert-type scale, with one indicating “strongly disagree” and seven indicating “strongly agree.”

First an original eight item scale was developed to measure authenticity, including the items authorized, real, genuine, original, fake (reversed), a copy (reversed), counterfeit (reversed), and classic. The scale was reliable, with a Cronbach’s α of .850. Two items were then experimentally removed to eliminate the concept of time or age. The item classic was dropped, raising the scale alpha to .854. Subsequently the item original was dropped, leaving the Cronbach’s α of the scale unchanged at .854.

The scale was then reworked, retaining the terms authorized, real, and genuine, plus adding in authorized and authenticated. The terms fake (reversed), a copy (reversed), counterfeit (reversed), were excluded as being largely redundant. This
resulted in a simplified five item scale with a Cronbach’s $\alpha$ of .886. Item-total correlations were high, ranging from .690 to .760.

This five item scale actually measures two different aspects of authenticity. A general authenticity factor was measured with the items authentic, real and genuine. A certification-related authenticity factor was measured by authenticated and authorised. In practice, some authentic items are authenticated and authorised, but most are not. Thus, the items for authenticated and authorised were removed to make the scale less context-specific and more generalisable. A four item scale, omitting the item authenticated generated a Cronbach’s $\alpha$ of .870. Reducing the scale to three items by further omitting the item authorised generated a Cronbach’s $\alpha$ of .861.

The resulting scale includes three straightforward indicators: authentic, real, and genuine. The Cronbach’s $\alpha$ of the reduced scale is .861, which is only marginally lower than the five item scale. The completed three item scale has good face validity, is parsimonious, and is optimised in terms of reliability. Item-total correlations are high, ranging between .720 and .757. Adding or eliminating any item reduces the overall reliability of the scale.

6.13.2. Scale development: inauthenticity

A similar scale was developed to measure the inauthenticity of an item in a particular context. This scale is designed to use a completely different set of descriptors than the authenticity scale, not merely direct negatives of the authenticity items (such as real and not real). This will avoid any statistical issues from excessively correlated measures in future modelling.

Six items were used in the initial scale for inauthenticity, including fake, a copy, counterfeit, real (reversed), authentic (reversed) and original. This scale generated a Cronbach’s alpha of .816. Subsequently the least-correlated item, original, was dropped leading to a more parsimonious scale with an identical alpha of .816. This reliability is slightly lower than the authenticity scale, but more than sufficient for use and manipulation checks. Each item does correlate highly with the total scale, with item-total correlations ranging from .515 to .709. The scale is optimized at five
items. An alternate four item scale which eliminates the item a copy leads the overall reliability essentially unchanged at .815. The five item scale was used for manipulation checks.

Two other more parsimonious scales were also developed for comparison. Three measures were used for one scale: fake, a copy, and counterfeit, which generated a Cronbach’s α of .711. Each item correlates highly with the total scale, with item-total correlations ranging from .457 to .646, and the three item scale is nearly optimised in terms of reliability. Using a two item scale which eliminates the item a copy slightly improves the overall reliability of the scale to .730. This is a feasible option. However, the five item scale, with the highest reliability, was used for the manipulation checks.

6.13.3. Discriminant validity: authenticity vs. inauthenticity

The reliability analysis above confirmed a high degree of positive correlation among the scale items within the authenticity and inauthenticity scales. Discriminant validity between the two scales was also assessed to assure that they are conceptually distinct. As shown below, each of the three measures for authentic (authentic, real, and genuine) is significantly negatively correlated (p<.001) with each of the three measures for inauthentic (fake, a copy, and counterfeit).

<table>
<thead>
<tr>
<th></th>
<th>Authentic</th>
<th>Real</th>
<th>Genuine</th>
<th>Fake</th>
<th>A copy</th>
<th>Counterfeit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authentic</td>
<td>.644</td>
<td>.697</td>
<td>-.552</td>
<td>-.465</td>
<td>-.446</td>
<td></td>
</tr>
<tr>
<td>Real</td>
<td>.644</td>
<td>.679</td>
<td>-.552</td>
<td>-.377</td>
<td>-.375</td>
<td></td>
</tr>
<tr>
<td>Genuine</td>
<td>.697</td>
<td>.679</td>
<td>-.571</td>
<td>-.452</td>
<td>-.421</td>
<td></td>
</tr>
<tr>
<td>Fake</td>
<td>-.552</td>
<td>-.552</td>
<td>-.571</td>
<td>.486</td>
<td>.575</td>
<td></td>
</tr>
<tr>
<td>A copy</td>
<td>-.465</td>
<td>-.377</td>
<td>-.452</td>
<td>.486</td>
<td>.330</td>
<td></td>
</tr>
<tr>
<td>Counterfeit</td>
<td>-.446</td>
<td>-.375</td>
<td>-.421</td>
<td>.575</td>
<td>.330</td>
<td></td>
</tr>
</tbody>
</table>

All correlations significant at p<.001, two-tailed

Table 6-6: Pearson correlations of authenticity and inauthenticity items

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As a result of this correlational structure, the three-item authenticity scale and the inauthenticity scale also have a strong negative correlation \((r = -0.656, p<.001)\). Thus, we have strong positive correlation within each scale, and strong negative correlations between the two scales.

An exploratory factor analysis of the same six items (3 authentic, and 3 inauthentic) also confirms the discriminant validity. The analysis found a single factor solution (eigenvalue = 3.57, explaining 59.5% of the variance). There were heavy positive factor loadings for all three authenticity items (from .802 to .841), and heavy negative factor loadings for all three inauthenticity items (from -.670 to -.808). This indicates that all six of these items are measuring the same general authenticity factor, but the authenticity and inauthenticity items, and scales, have an inverse valence as expected.

6.13.4. Scale development: liking scales

A liking scale was developed to serve as a dependent variable. The scale contains 9 measures: attractive, high quality, elegant, a nice example, has fine workmanship, I like this carving, something I would wear, I would be proud to own this carving, and I would buy this for a gift. These 9 items together generated a Cronbach's α of .897. Adding or eliminating any item reduces the overall reliability of the scale. Each item correlates highly with the total scale, with item to total correlations ranging from .568 to .823.

A two item version of the liking scale was also developed using the measures I like this carving and I would be proud to own this carving. The two item scale produces a Cronbach's α of .880 and a Pearson's r of .788. This represents a slight but inconsequential loss of reliability versus the 9 item scale.

6.13.5. Scale development: perceived quality

A five item perceived quality scale was developed for use as a dependent variable and covariate. The scale contained five items: attractive, elegant, high quality, has fine workmanship, and a nice example. The scale generated a Cronbach's α of .833, with item to total correlations ranging from .608 to .651. The scale is optimised, and deleting any item reduces its reliability.
Two more parsimonious scales were also explored. A four item scale, excluding the term *attractive*, generated a Cronbach's $\alpha$ of .806. Simplifying the scale still further by dropping *attractive* generates an essentially identical reliability of .806. For analytic purposes, the five item scale was retained.

### 6.13.6. Scale development: purchase intent

A two item purchase intent scale was developed for use as a dependent variable and covariate. The scale contained two items: *I would buy this carving* and *I would buy this for a gift*. The scale generated a Cronbach's $\alpha$ of .832 and a Pearson's $r$ of .717. One other related item, *I would be proud to own this carving*, was added and found to reduce the reliability of the scale to .832. This item was omitted from the final scale.

### 6.13.7. Scale development: value perception

A two item value perception scale was developed for use as a dependent variable and covariate. The scale has two basic aspects included. The measure *This is an expensive item* measures price expectations in a relative scale from low to high, but does not calibrate it in specific dollar terms. The item *This carving is worth quite a bit* is a mixture of price expectations and perceived value. These items correlate highly. The scale generated a Cronbach's $\alpha$ of .831 and a Pearson’s $r$ of .711.

The expected price measure (*To buy this greenstone pendant from a catalog, I would expect to pay:*) was experimentally included as a third measure. This reduced the Cronbach’s $\alpha$ to .637, in part because this measure was scaled differently than the other 7 point items. This item was omitted.

### 6.13.8. Scale development: greenstone expertise

A four item scale was assembled to represent the respondent’s personal experience with greenstone carvings. The four measures included *I have bought greenstone*, *I like greenstone carvings*, *I often wear greenstone*, and *I know a lot about greenstone*. The scale generated a Cronbach’s $\alpha$ of .744, and eliminating any item reduced the reliability of the scale. Dropping the weakest item, *I know a lot about*
greenstone, reduced the Cronbach’s α to .704. Therefore, the four item scale was retained.

The mean of the scale was 2.37 with a s.d. of 1.38, indicating a relatively low average level of greenstone expertise. The distribution of expertise is skewed, with a larger proportion of less-experienced respondents, and a smaller proportion with higher levels of expertise. This is believed to reflect the general trend within the New Zealand population.

6.13.9. Manipulation checks

To ensure the proper interpretation of results, it is necessary to determine that the manipulations in the experimental stimuli were effective. Manipulation checks were needed to assess the old-new manipulation, and the toi iho, New Zealand Made, and Made with Care manipulations. Manipulation checks were conducted by comparing respondent scores on a manipulation-specific scale across the different cells. If the respondents in a manipulated cell score significantly higher on the manipulation scale, the manipulation was judged to be effective. The following sections explain the construction of scales to measure the manipulations. The manipulation checks are included in subsequent chapters, with the analyses of Studies 1 and 2.

6.13.10. Scale development: newness

A five item scale for newness was developed as a manipulation check. Two measures are positively scaled, as originally measured: new and recently made. Three additional measures, old, historic, and classic, were reverse scaled. The five measures in total generated a Cronbach's α of .729. Reducing to a four item scale, by dropping classic, improved the reliability to .749. A subsequent reduction to three item scale was made by dropping the item historic.

The final scale contains three items. Two measures are positively scaled, as originally measured: new and recently made. One additional measure, old, was reverse scaled. The three measures in total generate a Cronbach's α of .795, with item to total
correlations ranging from .566 to .712. The scale is optimised at three measures, and adding or eliminating any item reduces the overall reliability of the scale.

6.13.11. Scale development: oldness

The manipulation of oldness is more straightforward than the manipulation of newness. It is possible to have a stimulus which is old itself (made in the past), as well as having old referents (design, tradition and function).

A scale for oldness was developed as a manipulation check. This scale contains four items. Two measures were positively scaled, as originally measured: old and antique. In addition, two additional measures were reverse scaled: recently made and new. The four measures in total generate a Cronbach’s α of .802 with item to total correlations ranging from .524 to .693. The scale is optimised at four measures, as adding or eliminating any item reduces the overall reliability of the scale.

6.13.12. Scale development: toi iho

A scale for the toi iho™ certification was developed as a manipulation check. This scale measures whether respondents perceived the toi iho™ certification, and whether they also properly associated Maori with the certification. The scale contains four items: certified as toi iho™, made by Maori, genuinely Maori, and made by a Maori carver. All items were positively scaled, as originally measured. The scale generates a Cronbach’s α of .882, with item to total correlations ranging from .710 to .821. The scale is optimised at four measures, and adding or eliminating any item reduces the overall reliability of the scale. All items were retained.

6.13.13. Scale development: Made with Care

A Made with Care scale was developed to use as a manipulation check. Two items directly measure the certification: certified as Made with Care and carefully made. Two additional correlated measures added: high quality, and has fine workmanship. The scale measures both the perceptions of the Made with Care certification, and what it means.
The four measures in total generated a Cronbach's $\alpha$ of .774. Each item correlates highly with the total scale, with item to total correlations ranging from .587 to .705. The four item scale is optimised in terms of reliability. Adding or eliminating any item slightly reduces the overall reliability of the scale. All items were retained.


A four item New Zealand Made scale was developed to use as a manipulation check. Two items directly measure the certification: certified as New Zealand Made and Made in New Zealand. Two additional items measure other aspects of New Zealand origin: made of genuine New Zealand greenstone, and a true piece of New Zealand. The four measures together generated a Cronbach's $\alpha$ of .775. A three item scale, omitting made of genuine New Zealand greenstone, raised the reliability to .792.

The final scale included just the two items which most directly measure the certification: certified as New Zealand Made and Made in New Zealand. The two measures together generated a Cronbach's $\alpha$ of .869 and a Pearson's $r$ of .778.

6.14. Study 2: antecedents, mediator, and outcome variables

Scales for Study 2 were developed to measure all variables included in the experiment. As illustrated below, the model used in Study 2 has been expanded versus Study 1. The model hypothesises that authenticity functions as a mediator between antecedent variables (certification, item age, social identity, and expertise) and outcome variables (liking, perceived quality, perceived value, and purchase intent). This is hypothesised as a partially-mediated relationship (Baron and Kenney 1986): the mediated effects of the antecedents on the outcome variable are stronger than the direct effects, but both types of effects may occur.
6.15. Questionnaire modifications for Study 2

The scales previously developed for Study 1 were found to have good reliability, and the analyses of the data worked well. Thus, the same basic questions listed in section 5.10 were used in Study 2, with the addition of one major new section on social identity, and a few relatively small changes. All reliability analyses were repeated on the new data from Study 2 to ensure the most reliable scales were used with this dataset.

6.15.1. Minor changes to the Study 2 Questionnaire

Because of a change in experimental design, the “Made with Care” manipulation was dropped, and the two questions related to Made with Care were omitted: “certified as “Made with Care”” and “I know of the “Made with Care” brand.” One
authenticity item was added (“mass-produced” (reversed)). One certification item was added (“not certified”) as a manipulation check.

Changes in the demographic section included the option to list a second ethnicity if desired. For respondents who were not born in New Zealand, “How many years have you lived in New Zealand?” was asked.

6.16. Social identity questions added in Study 2

A set of 11 questions on social identity were adapted from prior research (reviewed in Sinott 2006). These questions were administered in two different ways. One set of respondents answered the social identity questions first, before the experimental task, to prime perceptions of social identity. The non-primed respondents answered the social identity questions at the end of the experimental task. The social identity questions were:

- The Silver Fern is an important symbol to Kiwis.
- I like the Silver Fern flag.
- Wearing Greenstone is a sign of Kiwi identity.
- I feel good about being a New Zealander.
- I often think of the fact that I am a New Zealander.
- I feel strong ties to New Zealand.
- New Zealand is where I feel most at home.
- I have a strong attachment to New Zealand.
- Being a Kiwi is an important part of my identity.
- I am proud to be a Kiwi.
- New Zealand is the best country in the world.

6.17. Study 2: scale development for dependent variables

The scales for Study 2 are similar to those developed for Study 1. Six scales have been developed as dependent variables: authenticity, liking (in two versions), perceived quality, value perceptions, and purchase intent. Four other scales are used for manipulation checks: newness, oldness, toi iho™, and New Zealand Made. An additional scale of perceived social identity was developed for use as an independent variable.

Scale items were developed to measure the constructs under study in a valid and reliable manner. Items included ideas from existing research to the extent possible, but there is no known prior research which develops scales for the authenticity
construct. New items were based upon exploratory studies, and also used items which proved reliable in Study 1. In all cases, an attempt was made to develop simple, short, unidimensional measures which could be evaluated on a 7 point Likert-type scale. A range of items was measured for each construct of interest. The final scales were empirically derived by combining those measurements which optimised measures of internal consistency and homogeneity.

6.17.1. Summary: Study 2 scale reliabilities

The table below summarises reliabilities and descriptive statistics for the total sample. Specific details on the development of each scale are presented in further sections.

<table>
<thead>
<tr>
<th>Scale name</th>
<th>Items</th>
<th>Cronbach’s α</th>
<th>Pearson’s r</th>
<th>Mean</th>
<th>s.d.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authenticity</td>
<td>3</td>
<td>.880</td>
<td>—</td>
<td>4.94</td>
<td>1.48</td>
</tr>
<tr>
<td>Liking – 7 item</td>
<td>7</td>
<td>.954</td>
<td>—</td>
<td>4.52</td>
<td>1.55</td>
</tr>
<tr>
<td>Perceived Quality</td>
<td>5</td>
<td>.922</td>
<td>—</td>
<td>4.74</td>
<td>1.39</td>
</tr>
<tr>
<td>Perceived Value</td>
<td>2</td>
<td>.931</td>
<td>.872</td>
<td>4.17</td>
<td>1.56</td>
</tr>
<tr>
<td>Purchase Intent</td>
<td>2</td>
<td>.933</td>
<td>.874</td>
<td>4.15</td>
<td>1.82</td>
</tr>
<tr>
<td>Newness</td>
<td>2</td>
<td>.807</td>
<td>.682</td>
<td>4.54</td>
<td>1.77</td>
</tr>
<tr>
<td>Oldness</td>
<td>2</td>
<td>.712</td>
<td>.553</td>
<td>3.57</td>
<td>1.76</td>
</tr>
<tr>
<td>toi iho™</td>
<td>4</td>
<td>.871</td>
<td>—</td>
<td>4.43</td>
<td>1.55</td>
</tr>
<tr>
<td>New Zealand Made</td>
<td>2</td>
<td>.731</td>
<td>.592</td>
<td>5.40</td>
<td>1.77</td>
</tr>
<tr>
<td>Social Identity</td>
<td>7</td>
<td>.942</td>
<td>—</td>
<td>5.91</td>
<td>1.24</td>
</tr>
</tbody>
</table>

Table 6-7: Reliability and Descriptive Statistics for Study 2

6.17.2. Conceptual overlap of toi iho™ and New Zealand Made certifications

The nature of the two certifications being tested in this research presents an operationalisation issue with validity implications. It is possible that participants in the study could perceive an overlapping relationship between the toi iho™ Maori Made and New Zealand Made certifications. These two certifications are less distinct in one dimension (ethnicity), but more related in another dimension (geography). Technically, the requirements of these certifications are substantially different. The toi iho™ mark requires a specific ethnicity for producers or designers, but does not specify country of origin. This means that, contrary to what might be commonly
expected, toi iho™ items can be (and sometimes are) made by Maori artists residing in Australia.

![Diagram](image)

**Figure 6-6: Country of Origin vs. Certification of Ethnicity**

Conversely, the New Zealand Made certification requires country of origin, but does not make any reference to ethnicity. This creates a partial overlap. Considering country of origin per se (but not the New Zealand Made certification), an item can be made in New Zealand by any ethnicity but not necessarily certified as toi iho™, or made in New Zealand by Maori and certified as toi iho, or certified as toi iho™ but not made in New Zealand. The overlap reduces substantially when the New Zealand Made certification (rather than simply country of origin) is considered in conjunction with the toi iho™ certification. Although it is feasible for items to carry both certifications, it does not seem to occur in practice. An extensive search of online and retail outlets did not uncover any item which carries both certifications. The overlap between some dimensions, but not all, is a common occurrence in practice when considering multiple certifications.

For this study, the certifications were treated as dichotomous variables: an item is either certified as toi iho, or it is not. This is consistent with standard commercial practice. The analysis conducted on this basis has shown no statistical problems.
6.18. Scale development: key variables

Specific details on the development of individual scales is provided below, including the items used, reliability statistics and tests of unidimensionality where appropriate.

6.18.1. Scale development: authenticity

The authenticity scale for Study 2 is identical to the shorter three item scale used in Study 1, and is comprised of three indicators: authentic, real, and genuine. The scale is unidimensional. An exploratory factory analysis showed a single-factor solution (eigenvalue 2.42, accounting for 80.6% of the variance) with factor loadings ranging from .88 to .91.

The mean across all cells was 4.94 (s.d.=1.48) on a 7 point scale. All three items performed well, with item to total correlation >.73, and generating a Cronbach’s $\alpha$ of .880 for the total scale. This result is slightly better than the $\alpha$ of .861 that was generated in Study 1 using the same scale with a smaller sample. This scale has good face validity, is parsimonious, and is optimised in terms of reliability. Adding or eliminating any item slightly reduces the overall reliability of the scale.

6.18.2. Scale development: liking

A liking scale based on work from Study 1 was developed to serve as a dependent variable. Seven items covering positive affect towards the object were used. The specific measures included are: attractive, elegant, a nice example, an inspired piece, I like this carving, I would buy this for a gift, and I would be proud to own this carving. For the final scale, two items used in Study 1 were omitted: something I would wear, and has fine workmanship. These items were judged to be more related to properties of the carving itself, and somewhat less related to the liking of the piece. The scale is unidimensional. An exploratory factory analysis showed a single-factor solution (eigenvalue 5.48, accounting for 78.3% of the variance) with factor loadings ranging from .85 to .92.
The mean across all cells was 4.52 (s.d.=1.55) on a 7 point scale. The 7 item scale including these measures generated a Cronbach’s α of .954, with item to total correlations ranging between .79 and .89. The reliability of the modified scale with the large sample was .954, an improvement over the .897 for the Study 1 scale. The new scale is optimised, and deleting any item slightly reduces the reliability of the scale.

6.18.3. Scale development: perceived quality

The five item perceived quality scale developed in Study 1 was used as a dependent variable and covariate. The specific measures included are: attractive, elegant, high quality, a nice example, and has fine workmanship. The scale is unidimensional. An exploratory factory analysis showed a single-factor solution (eigenvalue 3.82, accounting for 76.5% of the variance) with factor loadings ranging from .86 to .89.

The mean across all cells was 4.52 (s.d.=1.55) on a 7 point scale. The scale generated a reliability of .922 with item to total correlations ranging between .77 and .83. The reliability of the scale with the larger Study 2 sample is considerably better that the Cronbach’s α of .833 achieved in Study 1. The scale is optimised, and deleting any item slightly reduces the reliability of the scale.

6.18.4. Scale development: value perception

A two item perceived value scale developed in Study 1 was used again in Study 2. The specific measures included are: this is an expensive item and this carving is worth quite a bit. The mean across all cells was 4.17 (s.d.=1.39) on a 7 point scale. These two items have a Cronbach’s α of .931 and a Pearson correlation of .872 (p<.01). This is considerably better than the Cronbach’s α of .831 and Pearson correlation of .711 achieved in Study 1.

6.18.5. Scale development: purchase intent

The two item purchase scale developed in Study 1 was reused as a dependent variable and covariate. The specific measures included are: I would buy this carving
and I would buy this for a gift. The mean across all cells was 4.15 (s.d.=1.82) on a 7 point scale. The scale generated Cronbach’s α of .933 and a Pearson correlation of .874 (p<.01). This is considerably better than the Cronbach’s α of .832 and Pearson correlation of .717 achieved in Study 1.

### 6.18.6. Scale development: social identity

The social identity scale used variations on 7 items which have been used in prior research (reviewed in Sinott 2006). The specific measures were: I feel good about being a New Zealander, I am proud to be a Kiwi, I often think of the fact that I am a New Zealander, Being a Kiwi is an important part of my identity, I feel strong ties to New Zealand, I have a strong attachment to New Zealand, and New Zealand is where I feel most at home. Four items were omitted because they reduced the reliability of the scale: New Zealand is the best country in the world, The Silver Fern is an important symbol to Kiwis, I like the Silver fern flag, and Wearing greenstone is a symbol of Kiwi identity. The scale was used as an independent variable in both primed and unprimed conditions. Reliability analyses were conducted by combining all observations from the primed and unprimed conditions.

The scale is unidimensional. An exploratory factory analysis showed a single-factor solution (eigenvalue 5.26, accounting for 75.2% of the variance) with factor loadings ranging from .79 to .90. The Cronbach’s α of .939 was calculated by combining all respondents (those who saw the questions first as well as those who saw them last) into a single sample. Individual item to total correlations range between .69 and .85, and no appreciable differences in reliability were seen by omitting further items.

### 6.18.7. Correlations of key variables

Tables of correlations among the key scales are presented below, with each variable labelled as to its conceptual function (antecedent, mediator, or outcome). The propositions being tested suggest that authenticity is a direct antecedent of the outcome variables of liking, perceived quality, perceived value, and purchase intent. Because these constructs are conceptually linked, they are also positively correlated.
For analysis purposes, variables were mean centred by subtracting the overall mean from each observation, yielding a transformed variable with an overall mean of zero and an unchanged standard deviation. This transformation of the variables into a mean deviation score will enable better interpretation of interaction effects (Aiken and West 1991). An additional benefit of mean centring is the reduction of any potential multicollinearity.

<table>
<thead>
<tr>
<th></th>
<th>Liking (outcome)</th>
<th>Authenticity</th>
<th>Perceived Age</th>
<th>Social Identity</th>
<th>Greenstone Expertise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liking (outcome)</td>
<td></td>
<td>.629</td>
<td>.232</td>
<td>.243</td>
<td>.228</td>
</tr>
<tr>
<td>Authenticity (mediator)</td>
<td></td>
<td>.629</td>
<td>.156</td>
<td>.175</td>
<td>.100</td>
</tr>
<tr>
<td>Perceived Age (antecedent)</td>
<td></td>
<td>.232</td>
<td>.156</td>
<td>.039</td>
<td>.086</td>
</tr>
<tr>
<td>Social Identity (antecedent)</td>
<td></td>
<td>.243</td>
<td>.175</td>
<td>.039</td>
<td>.178</td>
</tr>
<tr>
<td>Greenstone Expertise (antecedent)</td>
<td></td>
<td>.228</td>
<td>.100</td>
<td>.086</td>
<td>.178</td>
</tr>
</tbody>
</table>

All correlations significant at p<.001, two-tailed

Table 6-8: Correlations of Antecedents and Authenticity (mediator) with Liking (outcome)

<table>
<thead>
<tr>
<th></th>
<th>Perceived Quality</th>
<th>Authenticity</th>
<th>Perceived Age</th>
<th>Social Identity</th>
<th>Greenstone Expertise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Quality (outcome)</td>
<td></td>
<td>.701</td>
<td>.239</td>
<td>.247</td>
<td>.165</td>
</tr>
<tr>
<td>Authenticity (mediator)</td>
<td></td>
<td>.701</td>
<td>.156</td>
<td>.175</td>
<td>.100</td>
</tr>
<tr>
<td>Perceived Age (antecedent)</td>
<td></td>
<td>.239</td>
<td>.156</td>
<td>.039</td>
<td>.086</td>
</tr>
<tr>
<td>Social Identity (antecedent)</td>
<td></td>
<td>.247</td>
<td>.175</td>
<td>.039</td>
<td>.178</td>
</tr>
<tr>
<td>Greenstone Expertise (antecedent)</td>
<td></td>
<td>.165</td>
<td>.100</td>
<td>.086</td>
<td>.178</td>
</tr>
</tbody>
</table>

All correlations significant at p<.001, two-tailed

Table 6-9: Correlations of Antecedents and Authenticity (mediator) with Quality (outcome)
<table>
<thead>
<tr>
<th></th>
<th>Perceived Value (outcome)</th>
<th>Authenticity</th>
<th>Perceived Age</th>
<th>Social Identity</th>
<th>Greenstone Expertise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Value (outcome)</td>
<td></td>
<td>.583</td>
<td>.265</td>
<td>.180</td>
<td>.166</td>
</tr>
<tr>
<td>Authenticity (mediator)</td>
<td>.583</td>
<td></td>
<td>.156</td>
<td>.175</td>
<td>.100</td>
</tr>
<tr>
<td>Perceived Age (antecedent)</td>
<td>.265</td>
<td>.156</td>
<td></td>
<td>.039</td>
<td>.086</td>
</tr>
<tr>
<td>Social Identity (antecedent)</td>
<td>.180</td>
<td>.175</td>
<td></td>
<td>.039</td>
<td>.178</td>
</tr>
<tr>
<td>Greenstone Expertise (antecedent)</td>
<td>.166</td>
<td>.100</td>
<td>.086</td>
<td></td>
<td>.178</td>
</tr>
</tbody>
</table>

All correlations significant at p<.001, two-tailed

Table 6-10: Correlations of Antecedents and Authenticity (mediator) with Value (outcome)

<table>
<thead>
<tr>
<th></th>
<th>Purchase Intent (outcome)</th>
<th>Authenticity</th>
<th>Perceived Age</th>
<th>Social Identity</th>
<th>Greenstone Expertise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase Intent (outcome)</td>
<td></td>
<td>.533</td>
<td>.207</td>
<td>.199</td>
<td>.278</td>
</tr>
<tr>
<td>Authenticity (mediator)</td>
<td>.533</td>
<td></td>
<td>.156</td>
<td>.175</td>
<td>.100</td>
</tr>
<tr>
<td>Perceived Age (antecedent)</td>
<td>.207</td>
<td>.156</td>
<td></td>
<td>.039</td>
<td>.086</td>
</tr>
<tr>
<td>Social Identity (antecedent)</td>
<td>.199</td>
<td>.175</td>
<td></td>
<td>.039</td>
<td>.178</td>
</tr>
<tr>
<td>Greenstone Expertise (antecedent)</td>
<td>.278</td>
<td>.100</td>
<td>.086</td>
<td></td>
<td>.178</td>
</tr>
</tbody>
</table>

All correlations significant at p<.001, two-tailed

Table 6-11: Correlations of Antecedents and Authenticity (mediator) with Purchase Intent (outcome)

6.19. Methodological contribution in context

This analysis does share some methodological similarities with the Baumgartner and Pieters (2003), Ronda-Pupo and Guerras-Martin (2011) and Leong (1989) studies. However, it differs in three distinct ways: scaling of previously unquantified relationships, use of broad data sources, and use of multivariate techniques. These are detailed below. The key methodological contribution of this work is the development of a general scale for authenticity which can be potentially used to assess objects, services, or ideas in a range of different contexts.
Chapter 7. Methodology

7.1. Stimulus and cover story

The item chosen for the research was a New Zealand greenstone (pounamu) carving designed to be worn as a necklace. For Study 1, a traditional fishhook design, carved in a typical colour of greenstone, was used. This stimulus was rated as highly authentic by respondents. For Study 2, an effort was made to gain more variation in perceptions of authenticity. The second study used a familiar and iconic New Zealand design, the silver fern, as a motif. Although this design is common and well-known, it is not often carved in greenstone. The use of a typical icon executed in an atypical material did successfully increase variation in perceptions of authenticity. Numerical details are presented in section 8.1.2.

A cover story was placed the beginning of the questionnaire, immediately following the participant information sheet. The story is quoted verbatim below:

"A new company is starting a global website to sell small gifts. They need to know which gifts will be most popular. We want your opinion on a piece of jewellery. Consider it as a possible gift for a friend. Please read the description of each item, and answer all the questions about it."

The stimulus being tested, including both the graphic and text description, was placed immediately below the cover story. The full questionnaires for Study 1 and Study 2, in the form seen by respondents, are in presented in Appendices 1 and 2.

7.2. Manipulation of certification

The experimental design was conducted in different ways for Study 1 and Study 2. This section describes the general experimental considerations. The specific details of the different designs are discussed in the analyses of Study 1 and Study 2.
The toi iho™ mark was professionally designed for Creative New Zealand, and exists in three variants: maori made, indicating that the artist is of Maori descent; mainly maori, meaning that the item is created by a group, most of whom are of Maori descent; and maori co-production, meaning a product created by a Maori artist in association with others who are not of Maori descent. The mark is both categorical and ordinal: if any Maori are involved, an item can be toi iho™ (categorical). The higher the proportion of Maori participation, the higher the rank of the certification which is granted (ordinal). Any of these marks could be manipulated, and used as stimuli.

However, a major issue was ensuring that manipulations were sufficiently strong to show significant effects. There were three toi iho™ certification varieties from which to choose. It was decided that the strongest certification and best option for manipulation among was toi iho™ [100%] maori-made. Accordingly, certification was manipulated in three forms (Study 1) or two forms (Study 2), plus an uncertified control group in each study. The certifications used in Study 1 were toi iho™ [100%] Maori Made, New Zealand Made (with no mention of the carver’s ethnicity), and Made with Care (with no mention of ethnicity or place of origin). Study 2 was similar, but omitted the Made with Care trademark.

The logos which were used are shown below. The original logo (not used for this research) is the art work provided by Creative New Zealand for use on toi iho™ products. Three other versions were produced to be graphically similar (to minimise cell-to-cell differences), but to have different meanings (to allow the manipulations to take place). The “reproduced logo” is a very slight variation of the toi iho™ logo which results when the type is reset on computer. This toi iho™ mark certified ethnicity, and implied (but did not strictly certify) country of origin. The New Zealand Made logo certified country of origin but omitted ethnicity. The Made with Care logo maintains the graphic similarity, but removes certification of ethnicity and country of origin. The control cells have no verbal certification or logo.
7.3. Manipulation of age

Under some circumstances, perceptions of authenticity are linked to concepts of age, history, or perceived tradition. Stated age of the objects was manipulated in two treatments: old (referred to as antique and about 70 years old) and new (simply referred to as new). The term antique was used as a relatively neutrally-framed way of saying old. The term old was specifically avoided because it has commonly-understood negative meanings and nuances which were inappropriate for this research.

The Oxford English Dictionary (1989) defines the adjective antique, in the context of a physical object as: “Applied to old furniture, pictures, china, and other articles of virtu, esp. as sought for and collected by amateurs” or “Belonging to former times, ancient, olden.” Both of these meanings have a slight positive connotation. They are appropriate for the research, and the term antique is both commonly used and well-understood.
In contrast, the Oxford English Dictionary defines the adjective old as: “Of a material thing: that has been relatively long in existence or use (opposed to new); worn with age or use; decayed, deteriorated, shabby.” This definition has a clearly negative tone, and it conveys worn out rather than improved by age. It was believed that this negative tone could create an inappropriate bias in the old object cells.

The stimulus was designed as a small ad, and attempts to use typical commercial language. Commercial language typically favours the usage of antique or similar terms rather than old (or alternate synonyms) as detailed in the OED. Hence, we see the commercial terms “antique jewellery” or “estate jewellery,” or but typically not “old,” “second-hand” or “used” jewellery. All of these terms are true, but the latter three generally convey a reduction in value or price, as they do in the phrases “old clothes,” “second-hand shop” or “used car.”

Small-scale pretesting prior to Study 1 indicated no problems with the term antique, and all subsequent manipulation checks indicate that the cells flagged as antique properly communicated that the stimulus was intended to be old. The positive value perceptions of the antique cells indicated, consistent with prior research, that the stimulus properly communicated the added value of an authentically old piece.

7.3.1. Oldness/Newness

Authentic has a core meaning of being genuine or real. Although authentic goods can be of any age, either old or new, there is a general tendency by both researchers and consumers to associate authenticity with oldness. There are many academic studies of authenticity which relate oldness to authenticity (including Goulding 2000; Brown-Saracino 2004; Grayson and Martinec 2004; Brown, Kozinets and Sherry (2003), Littrell, Anderson, and Brown (1993), among others). On the other hand, there is minimal academic work exploring the intersection of authenticity and newness. The studies of authenticity as related to newness tend to focus on counterfeiting, or the inauthentic.
The relationship between age and authenticity is context-specific. One aspect of authenticity, indexicality (Grayson and Martinec 2004), has a specific focus on a spatial or temporal link to an original, and hence is inherently related to age. Many objects or experiences with an indexical component will have age-related aspects as an inherent part of their perceived authenticity. In the context used here, greenstone carvings, stronger perceptions of age were found to correlate with stronger perceptions of authenticity.

Newness can certainly be related to authenticity, but it is rarely the primary source of authenticity. For example, a genuine and new iPhone is certainly authentic. However, the introduction of a new model does not deauthenticate older models of the iPhone. The general source of the iPhone’s authenticity is its legitimate production by Apple (and hence the history of the brand, an age-related characteristic) and perhaps its purchase through an authorised outlet. The introduction of a product improvement does not make an earlier model inauthentic: it simply makes it less new. In a study of new craft souvenirs (Littrell, Anderson and Brown 1993), cultural and historic integrity (an age-related construct) was found to be related to authenticity, but no relationship between newness *per se* and authenticity was noted. Thus newness may be a necessary, but not sufficient, condition for affirming the authenticity of a new item.

### 7.4. Manipulation of social identity

Two of the certifications, toi iho™ Maori Made and New Zealand made, are closely tied to different aspects of the New Zealand social identity. It appears plausible that a stronger level of perceived identification with New Zealand might affect perceptions of authenticity of the stimulus, and could interact with certification. In Study 2, social identity was primed in one set of cells, and not primed in another. The priming occurred by changing the placement of a series of questions asking the respondent’s level of identification with New Zealand. In the primed condition, the questions were placed before the stimulus and questionnaire.
In the unprimed condition, the social identity questions followed the questionnaire, before the demographic questions. If the priming had an effect, it would change how respondents view the stimulus and/or the certification.

7.5. Selection of dependent variables

Research into authenticity in marketing-related areas is in its developmental stages. There is no prior research approximating a general theory of authenticity which could be applied in this context. Instead, there are a number of individual studies which attempt to incorporate pre-existing theory from other fields, and make their case using empirical data. A particular strong example of this approach is Grayson and Martinec (2004) which adopts semiotic theory about different aspects of authenticity (iconicity and indexicality), and empirically tests this in the context of historical sites. This is a good example of a mid-range theory (Merton 1968), which provides a bridge between narrower empirical findings and a broader, more general theory.

This research attempts to develop a theoretical contribution around the role of certification in creating perceptions of authenticity. Certification is a broadly used marketing strategy, but there is little recent research in the marketing field. The approach taken here takes existing theory, including theory around certification, warranties, and economics of information, and operationalizes it in the context of authenticity. The operationalization was accomplished by using a range of well-proven concepts as dependent variables.

In this research, authenticity is perceived as an important mediator. A broad range of factors have been suggested as antecedents of perceived authenticity in other research. The focus in this research is to understand the impact of certification on authenticity, but not to establish all of the factors which lead to perceptions of authenticity. In accordance with this objective, two factors related to properties of the individual (expertise with the product category and priming of social identity) were included, along with two factors related to the object, the manipulated age of the stimulus and the certification attached.
To understand the role of authenticity as a mediator, it is also necessary to measure outcomes of authenticity. Four main outcome variables were measured: liking, perceived quality, perceived value, and purchase intent. Each of these variables has received wide use in academic studies, and has been found to be a useful dependent measure for developing theory, as well as for prediction of attitude formation and customer behaviour. Examples of relevant prior use of these dependent variables are detailed below.

7.5.1. Integrative frameworks employing similar dependent variables

Several integrative frameworks include the dependent variables employed in this study. The Howard and Sheth (1969) theory of buyer behaviour includes inputs for quality and price, attitude as a mediating variable, purchase intention as a mediating variable and final purchase as an outcome. Zeithaml (1988) specifically relates quality, value and purchase intent in a conceptual model. Netermeyer et al. (2004) employed several of the dependent variables used in this research in the context of consumer-based brand equity models. Their framework suggested that purchase intention resulted from perceived quality and perceived value, mediated by willingness to pay. All of these variables were measured in this study.

Özsomer and Altaras (2008) developed a conceptual model for global brands which integrates aspects of three of the dependent variables used in this study. Their framework suggests authenticity as an antecedent of perceived brand quality. Perceived quality was, in turn, conceptualized as direct antecedent of brand attitude, which is conceptually similar to liking. Attitude, in turn, was suggested as a direct antecedent of purchase likelihood. These variables are conceptually similar, and structured in similar ways, to the conceptual model proposed here.

7.5.2. Prior use of purchase intent

Purchase intent has a long history as a widely used measure in the economics, psychology and marketing literatures. In foundational work, Juster (1966) developed a widely used scale for estimating the probability of an individual's future behaviour, including purchase behaviour. Fishbein and Ajzen (1975) suggested that
behavioural intention was the single best predictor of an individual's actual behaviour. Silk and Urban (1978) used purchase intent to predict estimated market outcomes. More recently, Netemeyer et al. (2004) integrated purchase intention as a dependent variable within a consumer-based brand equity framework.

Purchase intent has been used in authenticity-related research in the context of souvenirs (Kim and Littrell 1999). In an authenticity-related area, the study of counterfeits, purchase intent has been used in a general context by Cheng et al. (2011), and by Ha and Lennon (2006) and Kim and Karpova (2010) in the context of counterfeit fashion. An interesting contrast to purchase intent in the context of authenticity is offered by Grayson and Shulman (2000). Their study looked at irreplaceable possessions, which are defined by the fact that they cannot be purchased, which makes purchase intent an irrelevant construct in this context. Thus, authenticity can also be related to inability to purchase.

7.5.3. Perceived quality

Perceived quality has been used in a number of studies including Rao and Monroe (1988), who found that perceived quality does relate to price in realistic ways. They also found that as subject expertise increases, the use of intrinsic product cues increases. Their measure of subject expertise is conceptually similar to the measure of greenstone expertise used in this study. Perceived quality is also a common measure in studies related to brand equity. Aaker and Keller (1990) used perceived quality as a significant variable in a study of brand extensions. As noted above, perceived quality has been included in integrative frameworks by Howard and Sheth (1969), Zeithaml (1988), Aaker (1996), Netemeyer et al. (2004) and Özsomer and Altaras (2008).

7.5.4. Perceived value

Perceived value has been included in integrative models including frameworks by Zeithaml (1988), Aaker (1996), Netemeyer et al. (2004) and Özsomer and Altaras (2008). Some researchers have preferred to use the term customer value which typically implies a price to value relationship. Empirical work generally supports
that value has a better relationship to purchase and repurchase than such variables as satisfaction. Examples of value-related conceptual frameworks include Gale (1994), Woodruff (1990), and Parasuraman (1997).

7.5.5. Liking

Liking is a general measure of positive affect towards an object. A related measure is attitude towards the ad, which is a measure of affect. If positive, attitude towards the ad or brand is a measure of liking. Jamieson and Bass (1989) found a significant relationship between liking and purchase intent. Holbrook and Schindler (1994) successfully used degree of liking as a dependent variable in a study of preference formation. Tripp, Jensen, and Carlson (1994) considered likability of celebrity endorsers as the dependent variable of advertising exposures. Herr and Page (2004), noted the common use of affect measures such as liking and disliking, and found that different pathways are apparently taken in formulating judgements of liking and disliking.

7.6. Authenticity level of the stimuli

The stimulus approach taken here, using a relatively authentic product, is typical of other well-regarded authenticity research. For example, Beverland, Lindgreen and Vink (2008) used authentic Trappist beers (rather than mass-market products) to study how authenticity was conveyed by advertising. Similarly, Grayson and Martinez (2004) used authentic historic sites to study iconic and indexical authenticity. No research on authenticity has been found which does not use authentic exemplars as a stimulus.

An appropriate level of perceived authenticity, with a usable amount of variance, was required to make this study work. If an inauthentic stimulus were used, then there would be no way to determine the antecedents or outcomes of authenticity (simply because there would be either no perceived authenticity, or mis-perceived authenticity). Similarly, if the stimulus were perceived to be totally authentic, with
little variance around that perception, there would be insufficient variance to allow
the models to run properly.

A useful contrast is found at the opposite end of the authenticity spectrum. Research into counterfeiting necessarily explores the perceptions of products which embody an extreme level of construct strength. There is little nuance around the concept of a counterfeit: it is totally inauthentic, with little option for variance. Extrinsic attributes can moderate the counterfeit-related constructs to some degree (such as a legitimate product distributed through a gray-or black-market distribution channel). However, nearly all counterfeit-related stimuli must be regarded as binary: either counterfeit or legitimate, with no middle ground. The approach taken here on authenticity has the option to be more subtle, and look at scaled levels of authenticity. This study is the first known attempt in the marketing literature to assess the degree of authenticity in a quantitative framework.

7.7. Questionnaire

A questionnaire was designed to measure a range of authenticity and other product perceptions. Manipulation check questions for product age and specific certification type were included to ensure that the manipulations were actually perceived by the respondent. Social identity was treated as a priming task, not a manipulation. These questions measured pre-existing attitudes of the respondent, and were not manipulated. Priming (whether effective or not) either occurred or did not occur as a direct result of the questionnaire layout, and no manipulation check for priming was required.

The questionnaire used 7 point Likert-type scales, anchored as “strongly disagree” (1) to “strongly agree” (7). This format, in conjunction with single-word or short descriptors, allowed respondents to answer quickly and reliably. Questions were developed to measure the constructs underlying the hypotheses, the effectiveness of the manipulations themselves, presumed covariates, and attitudinal and demographic questions about the respondents. The actual questionnaire was
operationalised as a web-based survey, to be taken by respondents on their usual
computer at a time of their choosing. All questions were randomised within sections
of the questionnaire to eliminate any order biases.

Fuller discussions of the two questionnaire versions follow in Chapter 7 and
Chapter 8. The full text of the questionnaires can be found in Appendices 1 and 2.

7.8. Sample and data collection

Study 1 employed a sample of business students at a large New Zealand
university. A list including a census of all students in two introductory marketing
papers, plus an additional list of graduate students, was used as a sampling frame.
Entry into a prize draw for an iPod music player was used as an incentive. Each
student received a randomly-assigned invitation to respond to one of eight versions
of the web-based questionnaire. Cell sizes were approximately balanced by sending
an equal number of invitations for each cell, and sending additional invitations for
undersubscribed cells to more randomly-selected potential respondents.

Study 2 used a New Zealand-based commercial market research panel which is
more representative of the general public. Potential respondents received an e-mail
solicitation requesting their participation. As an incentive, respondents received
proprietary points after completion of the survey. The points can be exchanged for
incentives of the respondent’s choosing.

7.9. Internal and external validity of the studies

Cook and Campbell (1979) defined internal and external validity as follows:

"Internal validity refers to the approximate validity with which we infer that a
relationship between two variables is causal or that the absence of a relationship implies
the absence of clause. External validity refers to the approximate validity with which we
can infer that the presumed causal relationship can be generalized to and across alternate
measures of the cause and effect and across different types of persons, settings, and
times.” (Cook and Campbell (1979), p 37.)

7.9.1. Assessment of threats to internal validity

Cook and Campbell list 13 specific threats to internal validity which can occur
from research design. However, they note that random assignment of subjects, as
employed in both studies here, eliminates nine of these threats to internal validity. In general terms, this is because randomization creates similar groups are treated in controlled and similar ways. Each group is similarly constituted, experiences the same testing conditions and questionnaires, is presumed to have similar aptitude for the study at hand, and has no history which would bias results. All of these assumptions hold for the current research.

Cook and Campbell (1979) do list four potential threats to internal validity which randomization does not rule out: imitation of treatments (in which respondents from one group discuss survey answers with a different group), compensatory equalization (causing a bias if groups receive unequal levels of compensation), compensatory rivalry (typically when control group respondents believe they are being unfairly denied benefits received by non-control subjects), and demoralization of groups receiving less desirable treatments.

These issues are potentially relevant here, but all four of these threats were controlled for and thus eliminated in these experiments. The web-based survey design is used in Study 1 and Study 2 required individual respondents to take the survey on a computer of their choice at a time of their choosing. There was little or no opportunity for respondents to discuss the survey, eliminating the imitation of treatment problem. The compensatory and demoralization threats were also eliminated by this experimental design. Compensation for all respondents was equal within each study, and there were no particular benefits received by any cell of the experiment. Thus, all key threats to internal validity have been properly addressed by the research design.

7.9.2. Issues of External Validity

Most academic research in marketing concentrates on development and/or testing of theory, for which strong internal validity is essential. However, external validity, the ability to generalize beyond categories of persons used in the original research, is typically a lower priority. A large body of work on consumer behaviour, as in psychology, has been conducted with relatively homogeneous samples of
student subjects, typically with hypothetical stimuli. Such samples can provide strong internal validity, and it is presumed that the theoretical relationships between constructs should generalize to other groups. This is one important aspect of external validity.

A somewhat different aspect of external validity is managerial relevance. One strength of this research is the use of a real product category and an actual ethnic trademark as the stimulus. Thus, the results obtained should generalize directly to in-market experience of the same trademark with similar samples of individuals. There is one potential threat to both internal and external validity which is created by the use of an actual trademark. To the extent that the trademark is known, prior experience with it can bias results. A low level of pre-existing awareness of the toi iho trademark was suggested by exploratory discussions, and confirmed by measurements in both Study 1 and Study 2. As noted below, all readings of toi iho awareness are very low and consistent enough to avoid biasing results.

7.9.3. Pre-existing awareness of the toi iho brand

A high level of pre-existing awareness of the toi iho brand could create a bias in the research. The awareness of the toi iho brand was measured to confirm that this was not an issue. Awareness was measured on a seven-point scale using the question "I know of the toi iho brand." The question was administered after the stimuli were seen. Awareness across all cells of the experiment was low in Study 1, ranging from 2.40 to 2.68 on a seven-point scale. In contrast, awareness of the commercially-used New Zealand Made trademark was significantly higher, rating slightly below the midpoint of the scale, with an overall mean of 3.86.

The differences in awareness of the toi iho brand across the four cells of the Study 1 experiment were not significant ($F_{(3,189)}=0.359$, ns). A slight priming effect may have occurred within the toi iho cell, as all respondents in that cell would have seen that stimulus before answering the awareness question. Mean awareness of the trademark within the cell was slightly but not significantly higher at 2.68, compared to an average of 2.45 for the non-toi iho cells combined.
Awareness of the toi iho trademark was also low across all cells of the experiment in Study 2, with a grand mean of 2.17, with individual cells ranging from 2.00 to 2.30 on a seven-point scale. This was slightly lower than the means in Study 1. In Study 2, awareness of the commercially-used New Zealand Made trademark was significantly higher than seen in Study 1, rating well above the midpoint of the scale, with an overall mean of 4.99, and cell means ranging from 4.92 to 5.06. Thus, there is strong evidence that awareness of toi iho is minimal in comparison to a known (but not highly marketed) brand.

The possible priming effect seen in the toi iho cell in Study 1 did not occur in Study 2. Mean awareness of the trademark within the toi iho cell was 2.00, slightly lower than the average of 2.25 for the non-toi iho cells combined. These characteristics of the Study 2 sample affirm its appropriateness for generating valid analyses.

The low levels of consumer awareness of the toi iho brand measured in these studies are also consistent with the decision by Creative New Zealand to stop funding the trademark. The main rationale for defunding this project was the low usage by craftspeople and apparent lack of commercial impact, which is consistent with these findings of low awareness. For this research, the awareness of the toi iho trademark was judged to be low enough that it should offer essentially identical results to a hypothetical trademark with similar properties. This, therefore, preserves both internal and external validity for the studies.

7.10. Differences between Study 1 and Study 2

This research took an iterative approach, and insights from Study 1 were later incorporated into Study 2. As a result, the second study was not an exact replication of the first. The research hypotheses for Study 1 and Study 2 are summarised below in graphic form, with a discussion of specific differences following.
Figure 7-2: Research hypotheses for Study 1

Separate models:
- a. toi iho™
- b. New Zealand Made
- c. Made with Care
- d. Control (none)

Perceived Age
Authenticity
Certification
Outcome Variable

P5, P6, P7, P8
mediator regressions
outcome regressions

Individual factor
Expertise

Object factors

Figure 7-3: Research hypotheses for Study 2

Certification
Perceived Age
Social Identity
Expertise

P5, P6, P7, P8
mediator regressions
outcome regressions

a. Liking
b. Quality
c. Value
d. Purchase Intent
Most of the research hypotheses in Study 1 are identical to those in Study 2. There are two general changes. First, Study 1 was more parsimonious than Study 2, and did not explore the effects of social identity. Therefore, the model omits the social identity construct, and the associated Hypothesis 3 and Hypothesis 10. All hypotheses are numbered identically in both studies.

In addition, Study 2 used a single control condition, whereas Study 1 operationalised the control condition in two different ways: a complete omission of certification (the control condition), and a neutral certification (Made with Care). The Made with Care certification was included to allow for the use of a graphic device, which can sometimes increase the liking of an item to which it is applied. As operationalised, Made with Care allows for use of a graphic and certification name (consistent with the toi iho™ and New Zealand Made conditions) but without any of the specific meanings which the toi iho™ and New Zealand Made marks lend to the certified item. The control condition in both studies omitted both the graphic device and certification name.

Finally, Study 2 considered interaction effects between certification and perceived age (H9), social identity (H10), and expertise (H11). Social identity questions were not included in Study 1, and therefore Hypothesis 10 could not be tested in that study.

Hypothesis 9 and Hypothesis 11 were tested in an exploratory manner in Study 1, and no significant effects were found. This was believed to be a result of a limited sample size with inadequate statistical power to detect the proposed effects. Post-hoc calculations supported this premise. A lack of effects in a test with sufficient power is a substantive finding, and should be reported. However, in this case, it was judged that the insignificant results were a direct result of the small sample size. This is a methodological artefact, and not a substantive finding, and was therefore not reported.
The limited sample size also reduced the extent of testing which could be done in Study 1. For example, explicit consideration of the ΔR² which occurs from adding individual regressors was conducted in Study 2. That approach was not feasible in Study 1, as many of the individual regressor effects do not reach significance because of the smaller sample size. Accordingly, in Study 1 hypotheses were tested to the practical limits of the sample size. Study 2 took advantage of its larger sample size to increase the number of hypotheses tested and strengthen the methods employed.

7.11. Statistical analysis

The questionnaire, in conjunction with the experimental design, produced a range of categorical and interval-scaled variables related to the hypotheses set forth in Chapter 5. Scales were developed using exploratory factor analysis and reliability analysis techniques. Data was mean-centred (per Aiken and West 1991) to allow better interpretation of any interaction effects. The primary statistical approach was ordinary least squares regression. Full details of the statistical approaches used in contained in Chapters 7 and 8.

7.11.1. Alternate approaches via ANOVA or Structural Equation Modelling

Studies in this research used ordinary least squares regression modelling because it is a well-established and robust technique which provides unbiased parameter estimates when properly specified. The modelling approach used here, a set of nested regression models, utilised a classical approach to determine the incremental effect size of each successive addition to the model. The regression approach was chosen over an ANOVA analysis, as it preserves more of the variance in the original data set by not dichotomising interval-scaled data. Structural equation modeling is an alternate technique which could be used for this study, and may be employed in future research. However, it was not employed here for several reasons.

First, structural equation models are typically used for nonexperimental studies which lack random assignment, and are rarely used for pure experiments (Tomarken
and Waller 2005). This does not imply that an SEM cannot be used in this context, but it is unusual. Using the categorical variables which an experiment requires to denote membership of the treatment group do, to some extent, violate the assumptions of multivariate normality required by an SEM. OLS regression, in contrast, yields standard results when dummy variables are employed, as they were in this research (Kennedy 1979).

SEMs are rarely used in situations with hypothesized interactions, as were proposed here. Most published studies employ a simpler form of interaction between a latent and categorical variable. However, in this research, the interactions would need to be more complex, between two latent variables derived from interval-scaled data. Specifying and estimating such structural equation models which incorporate interactions of latent variables has a significant range of potential problems (Moosbrugger, Schermelleh-Engel, and Klein 1997).

In addition to concerns about modelling interactions, the process of developing a structural and a measurement model in an SEM context is complex, with many choices to be made about which paths to estimate and which to omit. There is little existing research on authenticity which would help in this context. The choices of which factors should be correlated, and which should not, is best driven by theory, and such theory is not yet adequate for authenticity.

Judging the quality of model fit is straightforward for regression modelling, as was used here. For structural equation models, many different measures of fit are available. However, there is not a strong consensus on which fit statistics should be used, or what levels of fit are acceptable. Some of these measures vary with sample size, making the issue even more difficult. It is also impossible to prove that a given model is correct by using fit statistics, and alternate models could be equally good or better (Tomarken and Waller 2005).

In summary, structural equation modeling was felt to have no compelling advantage for this research, and a range of potential disadvantages. A classic OLS regression approach was used, and a series of nested models was employed to
understand the effect size for each variable added. The structural question approach may be considered for future research.

**7.12. Sample demographics: Study 1 and Study 2**

No group-to-group differences were hypothesised at this stage of the research. The key objective was to develop a set of analyses with good internal and external validity employing a broad sample of individuals. Demographic differences were explored to determine if the specific sample characteristics had any potentially biasing effect on the final outcomes. The judgement was made that the samples for Study 1 and 2 did have some minor differences versus the populations from which they were drawn, as is common in experimental research. However, a set of analyses determined that these would not have a significant impact on the final analyses. Details are presented below.

**7.12.1. Study 1 sample characteristics**

Study 1 was conducted with a convenience sample of university students. The sample had a median age of 21 years. There are two notable skews to the sample compared to the University population at large. First, the sample is 62.1% female, as a result of a high response rate by women to the invitation to participate. However, a one-way ANOVA shows no significant differences in perceived authenticity, the main dependent variable, between women (mean = 4.89) and men (mean = 4.93), \( (F_{1,190}=0.044, \text{ ns}) \).

An ANOVA also shows no significant differences in perceived authenticity, the main dependent variable, across the ethnic groups \( (F_{9,181}=1.404, \text{ ns}) \). Overall, the university population does under-represent Maori at about 4.0% of the student body, and this sample is lower still with Maori at 1%. However, the group means for perceived authenticity are virtually identical for New Zealanders of European descent (4.93), Maori (4.88), and those choosing to be listed simply as New Zealanders (4.92). Furthermore, no particular ethnically-based hypotheses were proposed. Thus, these differences were judged to have no important impact on research results.
7.12.2. Study 2 sample characteristics

Study 2 was conducted by commercial market research panel, which was intended to more closely match the characteristics of the general New Zealand population. In general, the match is reasonably close.

<table>
<thead>
<tr>
<th>Respondent ethnicity</th>
<th>2006 Census</th>
<th>Study 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>NZ European + European</td>
<td>75.4%</td>
<td>77.6%</td>
</tr>
<tr>
<td>Maori</td>
<td>14.0%</td>
<td>8.0%</td>
</tr>
<tr>
<td>Asian (total)</td>
<td>8.8%</td>
<td>9.4%</td>
</tr>
<tr>
<td>Pacific peoples</td>
<td>6.6%</td>
<td>2.6%</td>
</tr>
<tr>
<td>All other</td>
<td>0.0%</td>
<td>2.4%</td>
</tr>
</tbody>
</table>

(Note: because of the methodological approaches used, the 2006 Census data totals to more than 100%.

Table 7-1: Study 2 Demographics vs. 2006 Census

The Study 2 sample is quite similar to the 2006 Census in the proportion of New Zealand/European respondents (77.6% vs. Census of 75.4%) and total Asian respondents (9.4% vs. Census of 8.8%). Maori are under-represented (8.0% vs. Census of 14.0%), as are Pacific peoples (2.6% vs. Census of 6.6%). This is believed to be due, in part, to lower penetration of computer usage in these groups. An ANOVA shows no significant differences in perceived authenticity, the main dependent variable, across the ethnic groups (F(9,1201)=0.482, ns).

The gender balance of the Study 2 sample is similar to the 2006 Census with women at 54.1% (vs. Census of 51.2%), men at 45.9% (vs. Census of 48.8%). Median age of the Study 2 sample (which was restricted to respondents over 16) is 45. This compares to a median from the Census data (when restricted to members of the total population over 14 years old, the closest point of comparison) of 40-44 years. This actually overstates the difference between the Census median and the Study 2 median. If medians were calculated in a comparable way, by adding 15 and 16 year olds into the Census data would raise the Census median, making it even closer to the Study 2 sample median. This calculation cannot be done in practice because 15 and 16 year olds are aggregated into the 15-19 year old category. The age profile of the sample is judged to be suitably close to the Census for analysis.
Chapter 8. Study 1: Design and Analysis

8.1. Study 1: experimental design

Study 1 was designed to fine-tune measurement and modelling issues using a modest sample size. This study included the first quantitative operationalisations of the key constructs. It was set up as a full factorial 2 x 4 between-subjects experimental design. Stimuli were presented monadically, with each subject seeing only one age/certification combination. This design strengthens the conclusions which can be drawn, because there are no biases or order effects caused by respondents seeing more than one stimulus. The design is outlined below.

<table>
<thead>
<tr>
<th>Certification</th>
<th>toi iho™</th>
<th>New Zealand Made</th>
<th>Made with Care</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Old A₀</td>
<td>A₀ X₀</td>
<td>A₀ X₁</td>
<td>A₀ X₂</td>
<td>A₀ X₃</td>
</tr>
<tr>
<td>New A₁</td>
<td>A₁ X₀</td>
<td>A₁ X₁</td>
<td>A₁ X₂</td>
<td>A₁ X₃</td>
</tr>
</tbody>
</table>

Table 8-1: Experimental Design

Age of the carving was manipulated as old and new, and the perceived age resulting from this manipulation was measured on an interval scale. Certification of the carving was operationalised into four categories: toi iho™ Maori made, New Zealand Made, Made with Care, and a control group with no certification.

8.1.1. Survey administration

The survey questions were programmed as a web-based questionnaire via a widely-used internet research provider (www.surveymonkey.com). The questionnaire as programmed is presented in Appendix 1. The online survey was set up in eight different versions, one for each of the eight cells.
Potential respondents were e-mailed a solicitation letter containing a link to one version of the survey. Respondents to the survey filled out the instrument on a computer of their choice, and at a time which was convenient for them. All 8 questionnaires were identical except for the stimulus. Questions within each survey were randomised to eliminate any possible order biases.

8.1.2. Stimuli

The three certification levels were designed to be very similar graphically. All cells use the same grey and blue logo, the same typeface, and layout as close as possible to the original professionally designed toi iho™ logo. The control cell used the same photograph and layout for descriptive text, but omitted the certification and the logo. An example of the stimulus from one of the cells is shown below.

![Figure 8-1: Experimental stimulus: old toi iho cell](image)

This fishhook or *hei matau* is about 70 years old.

**Material**
It is made of greenstone, also called *pounamu*, a type of nephrite jade.

**Symbolism**
This carving is a Maori design based upon fishhooks used in the Pacific. It represents strength, good luck, and safe passage across water.

**Trademark**
This carving carries the *Toi Iho* trademark. It certifies that the carving is made by a Maori craftsman in the Maori style using typical materials and techniques.
The 8 stimuli, shown monadically to respondents, are illustrated in Figure 7-1 below:

**Figure 8-2: Experimental Stimuli**

8.1.3. The cover story

A cover story was placed the beginning of the questionnaire, immediately following the participant information sheet. The story is quoted verbatim below:

"A new company is starting a global website to sell small gifts. They need to know which gifts will be most popular. We want your opinion on a piece of jewellery. Consider it as a possible gift for a friend. Please read the description of each item, and answer all the questions about it."

The stimulus being tested, including both the graphic and text description, was placed immediately below the cover story.
8.1.4. Sample

The sample was drawn from undergraduate and graduate commerce students from a major New Zealand University. A list including a census of all students in two introductory marketing papers, plus an additional list of graduate students, was used as a sampling frame. Students were recruited via e-mail. Student names were randomly assigned to one of the eight groups. Each student was e-mailed with a cover note containing a link to one web-based version of the survey. Cell sizes were balanced by initially sending an equal number of invitations for each cell. If required, additional invitations with links to the undersubscribed cells were sent to more randomly-selected potential respondents.

The incentive offered to students was an opportunity to be entered in a draw for a new model iPod Touch music player. This incentive was judged to be sufficient enough to attract interest, but not large enough to bias respondent behaviour.

8.1.5. Response rate

A total of 664 students were contacted, 609 via e-mail and an additional 55 contacted in person. This yielded 227 respondents (34.2% of those contacted) who began the survey, and 203 usable responses (a net 30.6% response rate). Most responses were received within the first 48 hours after contact. The overall response rate was above expectations, and the respondents appear to be similar to those in the sampling frame. For purposes of this pretest, this sample can be considered representative of the New Zealand business student population as a whole.
There was initially a higher than desirable variation in sample size per cell. This was adjusted by sending out additional invitations to randomly-selected potential respondents for the smaller cells, and reducing the proportion of further invitations for the larger cells. The final cell sizes are reasonably balanced, and the cell sizes achieved are shown below:

<table>
<thead>
<tr>
<th></th>
<th>Old</th>
<th>New</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>toi iho</td>
<td>23</td>
<td>31</td>
<td>54</td>
</tr>
<tr>
<td>New Zealand Made</td>
<td>24</td>
<td>21</td>
<td>45</td>
</tr>
<tr>
<td>Made with Care</td>
<td>25</td>
<td>29</td>
<td>54</td>
</tr>
<tr>
<td>Control</td>
<td>26</td>
<td>24</td>
<td>50</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>98</strong></td>
<td><strong>105</strong></td>
<td><strong>203</strong></td>
</tr>
</tbody>
</table>

Table 8-2: Cell Sizes

8.1.6. Statistical power issues

Overall, the quality of data was good, but the sample sizes within each cell were modest. Although there is little quantitative research into authenticity, it was assumed that size of the effects being tested would be relatively small. This combination of modest statistical power and small effects was expected to limit the number of significant effects which could be demonstrated.

Although a high level of statistical power was not achievable, it was expected that good initial insights into the hypotheses could be achieved. This was expected to be significant results for some hypotheses, and directional indications for others. This, in conjunction with development of usable scales, was considered sufficient to meet the objective of this study. A fuller understanding of significant effects and effect sizes was planned for in the larger Study 2.
8.2. Study 1:

8.3. Study 1: scale development

A range of scales were developed for analysis. Although many of these scales are related to commonly-measured constructs, the context is unusual enough to require unique measurement items. As a result, all of the scales developed are largely original. Seven have been developed as dependent variables: authenticity (in two versions), inauthenticity, liking (in two versions), value perception, purchase intent, perceived quality, and greenstone expertise. Five more scales are used for manipulation checks: newness, oldness, toi iho, New Zealand Made, and Made with Care. The table below summarises reliability statistics. Specific details on scale development are presented the preceding Chapter 6.

<table>
<thead>
<tr>
<th>Scale name</th>
<th>Number of Items</th>
<th>Cronbach's α</th>
<th>Pearson’s r</th>
<th>Mean</th>
<th>s.d.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authenticity - 5 items</td>
<td>5</td>
<td>.886</td>
<td>—</td>
<td>4.90</td>
<td>1.12</td>
</tr>
<tr>
<td>Authenticity – 3 items</td>
<td>3</td>
<td>.861</td>
<td>—</td>
<td>4.85</td>
<td>1.17</td>
</tr>
<tr>
<td>Liking – 9 item</td>
<td>9</td>
<td>.897</td>
<td>—</td>
<td>3.32</td>
<td>1.09</td>
</tr>
<tr>
<td>Liking – 2 item</td>
<td>2</td>
<td>.880</td>
<td>.788</td>
<td>3.96</td>
<td>1.40</td>
</tr>
<tr>
<td>Value Perception</td>
<td>2</td>
<td>.831</td>
<td>.711</td>
<td>3.78</td>
<td>1.27</td>
</tr>
<tr>
<td>Purchase Intent</td>
<td>2</td>
<td>.832</td>
<td>.717</td>
<td>3.66</td>
<td>1.55</td>
</tr>
<tr>
<td>Perceived Quality</td>
<td>5</td>
<td>.833</td>
<td>—</td>
<td>4.37</td>
<td>1.05</td>
</tr>
<tr>
<td>Greenstone expertise</td>
<td>4</td>
<td>.774</td>
<td>—</td>
<td>2.37</td>
<td>1.38</td>
</tr>
<tr>
<td>Inauthenticity</td>
<td>5</td>
<td>.816</td>
<td>—</td>
<td>3.05</td>
<td>1.24</td>
</tr>
<tr>
<td>Newness</td>
<td>3</td>
<td>.795</td>
<td>—</td>
<td>4.47</td>
<td>1.53</td>
</tr>
<tr>
<td>Oldness</td>
<td>4</td>
<td>.802</td>
<td>—</td>
<td>3.47</td>
<td>1.43</td>
</tr>
<tr>
<td>toi iho</td>
<td>4</td>
<td>.882</td>
<td>—</td>
<td>4.45</td>
<td>1.49</td>
</tr>
<tr>
<td>New Zealand Made</td>
<td>2</td>
<td>.869</td>
<td>.778</td>
<td>5.25</td>
<td>1.64</td>
</tr>
<tr>
<td>Made with Care</td>
<td>4</td>
<td>.774</td>
<td>—</td>
<td>4.63</td>
<td>1.11</td>
</tr>
</tbody>
</table>

Table 8-4: Reliability statistics for Study 1
8.4. Manipulation checks

Manipulation checks were run to assess the old-new manipulation, and the toi iho, New Zealand Made, and Made with Care manipulations. The following sections explain the construction of scales to measure the manipulations, followed by manipulation checks.

8.4.1. Manipulation check: newness

Perceptions of newness were compared between the group which saw the new stimuli, and the group which saw the old stimuli. For this analysis, all 4 certification cells which saw a new stimulus were combined, and compared to the combined 4 certification cells which saw an old stimulus. As required, the mean perceptions of newness were significantly higher for the new group (new group: mean of 5.04 with s.d. of 1.20; old group: mean of 3.86 with s.d. of 1.60). A one-way analysis of variance confirms that the means are significantly different ($F_{(1, 201)} = 35.498, p<.001$). This is judged to be suitable for further analysis.

The manipulation of newness has some limitations in this context. A greenstone fishhook can be recently made by modern craftsmen, but it cannot actually be totally new. The design is ancient, and the original function (as an actual fishhook) is now outmoded. Thus, we have a newly-made version of a traditional object: a hybrid of new and old. For this reason, the manipulation of newness cannot be totally unidimensional. Nonetheless, the respondents did rate the stimulus as new, with a mean of 5.04 on a 7 point scale.

The rating of newness for the respondents who saw the old stimuli is significantly lower at 3.86, slightly below the midpoint of the scale. This implies that respondents saw this stimulus as neither new nor old. Conceptually, this can be understood in context. The fishhook pendant is a familiar design in New Zealand, and it is commonly worn today in versions carved in either greenstone or bone. The roots of the design are old, but it is still fresh and current. The simultaneously classic and contemporary nature of this design will affect judgments of its age.
8.4.2. Manipulation check: oldness

As required, the mean perceptions of oldness were significantly higher for the old group (mean of 4.07 with s.d. of 1.43) versus the new group: (mean of 2.91 with s.d. of 1.19). A one-way analysis of variance confirms that the means are significantly different ($F_{(1, 201)} = 39.435, p<.001$). This is judged to be suitable for further analysis.

A further cross-check compared the oldness scale to the newness scale. The two scales are essentially a direct inverse of each other, with a negative correlation between the two scales of $-0.964$, significant at $p<.001$. This indicates that both scales are measuring the inverse of the same underlying construct, and lends confidence to the validity of both scales.

8.4.3. Manipulation check: toi iho™

As required, the mean perceptions of being certified as toi iho™ were significantly higher for the toi iho™ group (mean of 5.61 with s.d. of 1.32) than for the Control group (mean of 4.36 with s.d. of 1.45), the New Zealand Made Group (mean of 3.93 with s.d. of 1.17) and the Made with Care group (mean of 3.86 with s.d. of 1.33). A one-way analysis of variance confirms that the means are significantly different ($F_{(3, 188)} = 18.4445, p<.001$). A multiple comparison using Fisher’s least significant difference test shows that perceptions of toi iho™ in the toi iho™ cell are significantly higher ($p<0.05$) than perceptions of toi iho™ in each of the other three certifications. This is judged to be suitable for further analysis.
8.4.4. Manipulation check: Made with Care

A manipulation check was conducted for the Made with Care mark. This check is complicated by some overlap between the manipulation (the item was tagged with the Made with Care certification) versus the semantic meaning of the certification (indicating that an item was made carefully, regardless of its certification status). A one-way analysis of variance confirms that the means are significantly different ($F_{(3, 191)} = 3.684, p<.013$). There is an ordinal difference among the means: the Made with Care group (mean 5.02 with s.d. of) is higher than the toi iho™ group (mean of 4.69 with s.d. of 1.28), the New Zealand Made group (mean of 4.41 with s.d. of 1.07), and the Control group: (mean of 4.38 with s.d. of 1.03.)

A multiple comparison using Fisher’s least significant difference test shows that perceptions of Made with Care among respondents shown the Made with Care cell are significantly higher than two of the three certifications (New Zealand Made and Control), with $p<0.05$. The mean for Made with Care is directionally higher than for toi iho, but not significantly so in this small sample. This is believed to be because the Made with Care group is *certified* to be made with care, while the toi iho™ items are *judged* to be carefully made (more so that New Zealand Made or the control group). These results are considered sufficient for further analysis.

8.4.5. Manipulation check: New Zealand Made

The mean perceptions of being New Zealand Made were higher for the New Zealand Made group (mean of 5.61 with s.d. of 1.32) than for the Control group (mean of 4.36 with s.d. of 1.45), the New Zealand Made Group (mean of 3.93 with s.d. of 1.17), and the Made with Care group (mean of 3.86 with s.d. of 1.33).

A one-way analysis of variance confirms that the means are significantly different ($F_{(3, 199)} = 13.550, p<.001$). A multiple comparison using Fisher’s least significant difference test shows that perceptions of New Zealand Made in the New Zealand Made cell are significantly higher ($p<0.05$) than perceptions of New Zealand Made in each of the other three certifications. This is judged to be sufficient for further analysis.
8.5. Study 1: data analysis and hypothesis tests

It is expected that the effects of antecedent variables (certification, perceived age, and expertise) on the outcome variables (liking, quality, value, and purchase intent) will be partially mediated by authenticity. There should be a strong direct effect of authenticity on the outcome variable, in combination with weaker direct effects of the antecedents on the outcome variable. The relationships between the antecedents and the outcome variables are shown in the Figure 7-3 below, but have not been specifically hypothesised.

![Figure 8-4: Research hypotheses for Study 1](image)
8.5.1. Overview of hypothesis testing procedures

Hypotheses were tested with ordinary least squares regression and MANOVA. Certification was operationalised as a categorical variable, and treated as a dummy variable in the analysis. All other constructs under test, both independent and dependent variables, are based on perceptions, and were operationalised at an interval-scaled level.

8.5.2. Effects of certification: modelling issues

The relationship between perceptions of quality, price, and value are complex and individual. For example, luxury goods generally offer high quality at a high price, when measured objectively. However, individuals can sharply disagree about the value such goods provide. Ultimately, an individual’s purchase intent (or related variables) depends on perceived product value in conjunction with other exogenous influences including category need, ability to pay, and other factors.

In this study, authenticity, quality, perceived value, and willingness to pay were measured, not manipulated. Respondents were given only product attributes, but no explicit statements about quality, and no suggestions of product pricing. The respondents' judgments about authenticity, quality, and value are personal and individual, resulting from the attributions that they make about the object.

There is limited foundational research which models certification or authenticity. This study took a first step, and uses parsimonious models to look for major effects. Given the paucity of previous quantitative research on authenticity, it was premature to attempt a comprehensive model of all major effects. This research concentrated on illuminating some basic relationships, and on understanding some factors which can generalise across different contexts in which authenticity is important.

8.6. A check of assumptions underlying the regression model

A number of assumptions must be met to ensure that an ordinary least squares [OLS] regression model will provide the best linear unbiased estimate. Different
authors enumerate these underlying assumptions in somewhat different ways. This section reviews the extent to which this model satisfies the key regression assumptions in a parsimonious five assumption format (Kennedy 1985).

The first assumption considers specification errors, and assumes that the model is a linear function of the independent variables plus an error term. This model is sufficiently well-specified to satisfy the first assumption. The relationship between the independent and dependent variables is linear, and the beta weights of the independent variables are constant.

There is modest specification error in both the mediator and outcome regressions. Not all antecedents of authenticity are included as regressors, nor are all the precursors to liking, quality, value, or purchase intent. In a practical sense, these relationships are sufficiently complex that a model can never capture all of the relevant independent variables. The omission of some regressors is a common issue in social science research, and the implications can be seen in the relatively low R² values and large disturbance terms for many such models. Although there is a modest level of specification error here, OLS regression is reasonably robust to violations of this assumption.

The second assumption states that the meaning of the error term must be zero to avoid a biased intercept. This assumption is met.

The third assumption considers whether residuals have the same variance and are not correlated with each other. An examination of the plotted residuals shows no pattern, indicating that the homoskedasticity assumption has been met. Because this is a cross-sectional analysis, autocorrelation is not an issue.

The fourth assumption deals with measurement error, and states that observations of the independent variables should be repeatable without variation. There are several implications to this assumption, and they are all adequately addressed here. The sample is judged to be highly representative of a New Zealand university student population, and such students are commonly used for initial studies for marketing research. The sampling frame was fairly broad, including both
undergraduate and graduate students. Each potential respondent was randomly assigned to receive an invitation to participate in one of the 8 cells of the design. Quotas were managed to achieve balanced cell sizes by sending additional randomly-selected invitations to participate in undersubscribed cells. There are no factors which would cause observations not to be independent, and autocorrelation is not relevant because this is not a time series analysis. Finally, the level of measurement, using a 7 point interval scale, is adequate. Standard scale development techniques have been used to help reduce measurement error.

The fifth assumption states that there cannot be perfectly collinear relationships between independent variables, and that there are sufficient degrees of freedom to obtain a reliable estimate. Multicollinearity statistics indicate no concerns with linear combinations. Correlations among variables are generally moderate, though there are some stronger correlations between authenticity and the outcome variables, particularly liking and perceived quality. As these variables have a causal relationship (perceptions of authenticity drive liking or perception of quality), and they are conceptually distinct, this is not judged to be a cause for concern. Tolerance and the condition index are very low. The sample size is generally adequate to allow for proper estimation of the larger effects, though statistical power is not sufficient for weaker effects. This will be addressed with a larger sample in Study 2.

In summary, all of the major assumptions underlying OLS regression have been sufficiently satisfied. This lends confidence to the results of further analysis.

8.7. Antecedents of authenticity: direct effects

Authenticity is seen as a partial mediator between antecedent variables and the outcome variables of liking, perceived value, perceived quality, and purchase intent. Three hypotheses consider the direct effect that antecedents have on perceptions of authenticity, the mediator:

H1: Certification will have a positive direct effect on perceived authenticity.
H2: Perceived product age will have a positive direct effect on perceived authenticity.

H4: Perceived expertise with the product category will have a positive direct effect on perceived authenticity.

Hypotheses 1, 2 and 4 examine broad antecedents of authenticity which may generalise across different contexts. This is different from most previous research, which tends to carefully consider category-specific antecedents. The hypotheses suggest that these antecedents will have a direct positive effect on perceptions of authenticity. They were tested simultaneously with ordinary least squares regression, in the form:

\[ \text{Authenticity} = (\beta_0 + \beta_1 \text{toi iho}^\text{TM} + \beta_2 \text{New Zealand Made} + \beta_3 \text{Made with Care} + \beta_4 \text{perceived product age} + \beta_5 \text{greenstone expertise} + \varepsilon) \]

This model was initially run with the inclusion of 3 control variables: age, gender, and an urban-rural dummy variable. None of these variables was significant. When the control variables were added, the overall \( R^2 \) showed virtually no improvement, and coefficients for the key individual variables were either identical or trivially different. Because this made the model more complex and consumed additional degrees of freedom with no perceived benefit, the control variables were omitted in all subsequent analyses.

8.7.1. Test of Hypothesis 1, the effect of certification on authenticity

The model is significant \( (F_{(5, 183)} = 4.476, p<.001) \) with an \( R^2 \) of .109. However, Hypothesis 1, that certification will have a positive direct effect on perceived authenticity, is not supported. None of the three certification types had a significant effect on authenticity, though the toi iho\textsuperscript{TM} certification appears directionally related to authenticity (standardised \( \beta \) of .150, \( p<.084 \)) and may have been significant if more power were available.
A subset of hypothesis 1, concerning the differences among certification types, was also considered:

**H1a:** Items certified as toi iho™ will be rated as more authentic than items certified as New Zealand Made.

**H1b:** Items certified as toi iho™ will be rated as more authentic than items which are not certified.

**H1c:** Items certified as New Zealand Made will be rated as more authentic than items which are not certified.

**H1d:** Items certified as Made with Care will be rated as equally authentic to items which are not certified.

A one-way analysis of variance was not significant, and therefore the means of these certifications are not significantly different in this study. The toi iho™ certification is directionally but not significantly higher on authenticity (mean = 5.13 with s.d. = 1.17), with the other three certifications virtually equal in this test: New Zealand Made (mean = 4.76 with s.d. = 1.25), Made with Care (mean = 4.69 with s.d. = 1.04), and Control (mean = 4.78 with s.d. = 1.21).

The fact that the Made with Care certification has a marginally lower mean for authenticity than the Control condition is interesting. This implies that a meaningless certification may actually reduce perceptions of authenticity versus an uncertified condition. When Made with Care was tested in the regression model, it was not significant, and therefore effects should not be rigourously interpreted. Nonetheless, the negative β coefficient for Made with Care in the regression model is consistent with the possibility that a meaningless certification could reduce perceptions of authenticity.

**8.7.2. Test of Hypothesis 2, the effect of perceived age on authenticity**

Hypothesis 2 was supported. Perceived product age had a significant direct effect on authenticity with a standardised β of .214 (p<.003). This indicates that increased age (oldness) has a significant direct effect which drives increased perceptions of authenticity.
8.7.3. Test of Hypothesis 3, the effect of expertise on authenticity

Hypothesis 3 was also supported. Greenstone expertise had a significant direct on authenticity with a standardised β of .163 (p<.023). This finding is logical, given the extensive prior work on experts versus novices, but this is believed to be the first time that expertise has been formally extended into the authenticity context.
8.8. Consequences of authenticity: effects on the outcome variables

Authenticity is believed to have direct effects on the outcome variables of liking, perceived value, perceived quality, and purchase intent. Three hypotheses consider the direct effect that authenticity has on the outcome variables:

H5: Perceived authenticity will have a positive direct effect on the liking of an object.

H6: Perceived authenticity will have a positive direct effect on the perceived quality of an object.

H7: Perceived authenticity will have a positive direct effect the perceived value of an object.

H8: Perceived authenticity will have a positive direct effect on the purchase intent for an object.

The general hypothesis that authenticity would affect liking, perceived quality, perceived value and purchase intent was tested. A one-way MANOVA revealed a significant multivariate main effect of authenticity on the four dependent variables (liking, perceived quality, perceived value and purchase intent). The diagnostic statistics for this analysis are strong, with Wilks’ $\lambda = .401$, $F_{(64, 667.80)} = 2.747$ (p < .0010), partial eta squared = .204 and observed power to detect the effect =1.00. Box’s M test is not significant.

There are notably different amounts of variation that authenticity explains in each of the dependent variables. For perceived value, the $R^2 = .218$; for purchase intent, the $R^2 = .251$; and for liking, the $R^2 = .361$. The strongest effect was seen for authenticity on perceived quality with the $R^2 = .456$. Taken together, these results give a clear indication that authenticity has a strong effect on the outcome variables. Hypotheses 5, 6, 7, and 8 are supported.
8.8.1. Moderated versus direct effects

Further testing was required to probe the simultaneous direct effects of authenticity and the antecedents of authenticity (certification, perceived age, and greenstone expertise). This was modelled in the form:

Outcome* = (β₀ + β₁ authenticity + β₂ perceived age + β₃ greenstone expertise + ε).

* where outcome variable = liking, or perceived quality, or perceived value, or purchase intent.

Four different versions of the model above were run, each using one of the four dependent variables. In addition to the model above, the certifications were tested as control variables in additional regressions, even though certification was insignificant in earlier tests. The addition of certification made no difference to the regression results. Both R² and the standardised β coefficients of the other regressors were virtually identical to the regressions with certification omitted. Therefore, outcome variable models including certification are not reported here. Further analysis of the effects of certification will be conducted in Study 2.

The results considering the effects of antecedents, tested in conjunction with the direct effects of authenticity, are reported below.
8.8.2. Hypothesis 5: direct and mediated effects on liking

Authenticity had the strongest effect on liking in this model, although there is also a strong and nearly equal effect of expertise on liking. The overall results were consistent with a partially mediated relationship. Both perceived age and expertise had significant direct effects on liking, and they also had significant paths which are mediated by authenticity. The $R^2$ of .551 for the outcome model is quite high, indicating that category expertise and authenticity together account for a large proportion of the variance in liking. This finding has significant implications for managers who wish to improve attitudes towards their products.
8.8.3. Hypothesis 6: direct and mediated effects on perceived quality

Authenticity had the strongest effect on perceived quality in this model, although expertise is also an important contributor. The overall results were consistent with a partially mediated relationship. Both perceived age and expertise had significant direct effects on perceived quality, and also had significant paths which are mediated by authenticity. The $R^2$ for the perceived quality model is quite high at .510, indicating that just three variables (age, expertise and authenticity) account for half the variance in perceived quality.
8.8.4. Hypothesis 7: direct and mediated effects on perceived value

Authenticity was the strongest single contributor to perceived value in this model. Authenticity and age account for the majority of effects in this model, but the proportion of variation explained ($R^2 = .260$) is only half as much as the models for liking and perceived quality. This suggests that there may be other variables which contribute to value perceptions, and which should be included in this model. Expertise is not significant here ($p<.061$) and had a relatively low $\beta$ coefficient, indicating that it is not a strong contributor to value perceptions.

Figure 8-7: Direct and mediated effects on perceived value
8.8.5. Hypothesis 8: direct and mediated effects on purchase intent

There were only two significant contributors to purchase intent in the model. Expertise had the strongest effect on purchase intent, and had a considerably stronger effect than authenticity. The $R^2$ at .370 is not as strong as those in the models for quality and liking. This may be explained in part by the general finding that models explaining attitudes generally have better fit and explanatory power than models which attempt to behaviour or behavioural intention.
8.9. Study 1: conclusions

The findings of Study 1 offer clear directions for future research and some possible advances over previous research. The authenticity concept has been operationalised in a new way, and both scale development techniques and hypothesis tests indicate that this operationalisation is successful. Other scale developments were successful, and significant manipulation checks confirm that it is possible to manipulate certification and age perceptions in an experimental design.

In terms of substantive findings, an exploratory factor analysis demonstrated that there is a clear factor structure to the authenticity concept, and this conforms well to prior theory. Perceived age of an object, and an individuals’ expertise with the product category, were both found to be significant antecedents of authenticity. Authenticity was found to have significant direct effects on outcome variables: stronger liking, higher perceived value, increased quality perceptions, and greater purchase intent. These findings are an expansion beyond the existing literature.

However, the effects of certification were not clear from Study 1. There were some directional but insignificant indications that authenticity may be affected by certification, in the expected manner. However, the sample size used for this study was not large enough to produce significant results. A key learning from this study is the need for a larger sample, which will be implemented in Study 2.
Chapter 9. Study 2: Design and Analysis

9.1. Improvements added in Study 2

As noted earlier, this research took an iterative approach. Insights from Study 1 were incorporated into Study 2, which was broader in scope, more detailed in methodology, and used a much larger sample for increased statistical power. Study 2 retested all of the research hypotheses from Study 1.

Social identity was added as a new construct in the second study. In addition, Study 2 added four additional hypotheses which consider the direct effects of social identity on perceptions of authenticity (H3), and explore the ways in which certification interacts with age (H9), expertise (H10), and social identity (H11). Finally, Study 2 used a single control condition with no certification of any kind. Study 1 found this type of control to be a better point of comparison than the neutral Made with Care certification. The overall model for Study 2 is presented below.

Figure 9-1: Hypotheses tested in Study 2
Study 1 found direct effects for the antecedents of certification, perceived object age, and expertise on authenticity. Although interaction effects were tested in an exploratory manner in Study 1, no significant effects were found. This was believed to be a result of a limited sample size with inadequate statistical power, and post-hoc power calculations supported this premise. Study 2 replicated the test of the direct effects, and addressed the issue of inadequate power by retesting the interaction effects with a much larger sample size.

Study 2 also replicated the test of the partially-mediated relationship found in Study 1, in which authenticity mediates the effects of antecedents on the outcome variables of liking, perceived quality, perceived value, and purchase intent. The antecedents had significant direct effects on the outcome variables, but the effects of authenticity had stronger direct effects on these same outcome variables, indicating a partially-mediated relationship.

Study 2 took advantage of its larger sample size strengthen the analytical methods employed. The larger sample for Study 2 allowed explicit consideration of the effect size, as measured by $\Delta R^2$, which occurs from adding individual regressors in sequence. That approach was not feasible in Study 1, as many of the individual regressors did not reach significance because of the smaller sample size.

Finally, the nature of the sample was considerably different in Study 2. A sampling frame of potential respondents was randomly drawn from a large commercial market research panel, and those who responded were randomly assigned to a particular cell of the design. This is a stronger procedure than that used in Study 1, and the sample is more representative overall.
9.2. Study 2: experimental design

Study 2 used a full factorial 2 x 3 x 2 between-subjects design. Stimuli were presented monadically, with each subject seeing only one age/certification/social identification priming combination. This design strengthens the conclusions which can be drawn, because there are no biases or order effects caused by respondents seeing more than one stimulus. The design is outlined below.

<table>
<thead>
<tr>
<th>Social identity</th>
<th>Age</th>
<th>toi iho™ X₀</th>
<th>New Zealand Made X₁</th>
<th>Control X₂</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social ID not primed S₀</td>
<td>Old A₀</td>
<td>S₀A₀ X₀</td>
<td>S₀A₀ X₁</td>
<td>S₀A₀ X₂</td>
</tr>
<tr>
<td>New A₁</td>
<td>S₂A₁ X₀</td>
<td>S₂A₁ X₁</td>
<td>S₂A₁ X₂</td>
<td></td>
</tr>
<tr>
<td>Social ID primed S₁</td>
<td>Old A₀</td>
<td>S₁A₀ X₀</td>
<td>S₁A₀ X₁</td>
<td>S₁A₀ X₂</td>
</tr>
<tr>
<td>New A₁</td>
<td>S₁A₁ X₀</td>
<td>S₁A₁ X₁</td>
<td>S₁A₁ X₂</td>
<td></td>
</tr>
</tbody>
</table>

Table 9-1: Experimental Design

The key predictors were manipulated. Age of the carving was operationalised in two categories, old and new. Certification of the carving was operationalised into three categories: toi iho™ Maori made, New Zealand Made, and a control group with no certification.

In addition, questions on the respondent’s social identity were used to prime attitudes. In the primed group, respondents answered a set of questions on social identity first, before they saw the stimulus and the authenticity-related questions. In the unprimed group, the order of questions was inverted. Respondents saw the stimulus and answered the authenticity-related questions first. This unprimed group then answered the set of social identity questions at the end of the questionnaire. For the unprimed group, the placement of the social identity questions at the end of the research task ensured that they would have no priming effect on answers to the prior questions. In Study 2, the Made with Care certification was omitted. In Study 1, Made with Care was found to be an inappropriate control certification, and had inconsistent effects on the dependent variables.
9.2.1. Study 2: survey administration

The survey questions were administered as an online survey to a commercial market research panel run by the New Zealand-based Smile City organisation. The survey was set up in 12 different versions as shown above. All 12 questionnaires were identical except for the stimulus, and the placement of the social identity questions, per the design.

A random selection of qualified panel members (16 years of age or older) were e-mailed a solicitation letter. Panellists who responded were then randomly assigned to one of the 12 cells, and they filled out the survey instrument on their own computer at a convenient time. Questions within each section of the questionnaire were also randomised to eliminate any possible order biases.

9.2.2. Stimuli

The questions were programmed as an online survey. Study 2 used a single greenstone carving as the visual stimulus for all cells. The age and certification of the carving were manipulated by varying the verbal description, and adding (or omitting) certification logos and language.

Calibrating the stimulus to embody the appropriate level of authenticity is challenging. A completely inauthentic stimulus cannot be made to seem authentic, while perceptions of an overly-authentic stimulus may override smaller effects. The Study 1 stimulus used a traditional Maori necklace design (a fishhook) carved of a traditional material (New Zealand greenstone). This stimulus was rated as having a moderately high level of authenticity across the cells, with a mean of 4.85 on a 7 point scale (s.d. = 1.17).

A slightly different approach was taken for Study 2, using a less-typical design. The Study 2 necklace used a design motif which is quite familiar in New Zealand (the silver fern), but which is not commonly carved in greenstone. This stimulus did not appreciably change the mean level of authenticity (4.94), but did appear to increase the variability in perceptions (s.d. = 1.48).
The stimuli for the two certification cells, toi iho™ and New Zealand Made, were designed to be as similar as possible. Both use the same grey and blue graphic and the same typeface as the original commercially designed toi iho™ logo. The control cell used the same photograph and layout for descriptive text, but omitted the certification and the logo. A sample stimulus from one cell is illustrated below:

![Sample Stimulus](image)

**Figure 9-2: Experimental stimulus: old toi iho cell**

A total of 6 stimuli were used, in conjunction with 2 versions of a priming task, yielding a 12-cell design. For the priming task, social identity questions appeared either at the beginning of the questionnaire (primed), or at the end (unprimed). The 6 stimuli are illustrated below:
9.2.3. The cover story

A cover story was placed at the beginning of the questionnaire. In the social identity unprimed condition, the cover story immediately followed the participant information sheet. In the social identity primed condition, respondents first saw the participant information sheet, followed by 8 questions on social identity. For these cells, the cover story immediately followed the social identity questions.
The cover story is quoted verbatim below:

“Would you buy this for a friend?

A new company is starting a global website to sell small gifts. They need to know which gifts will be most popular. We want your opinion on a piece of jewellery. Consider it as a possible gift for a friend. Please read the description of each item, and answer all the questions about it.

To answer the questions, just put the cursor in the circle that best represents your opinion, and click the mouse button.”

The stimulus being tested, including both the graphic and text description, was placed immediately below the cover story.

9.2.4. Sample and response rate

The sampling frame was members of a large commercial market research panel which was set up on a volunteer opt-in basis. Potential respondents were screened to be 16 years of age or older. A total of 3600 panel members were contacted to participate in Study 2. This yielded 1470 respondents (40.8% response rate among those contacted) who began the survey, and 1209 complete responses (a net 33.6% completion rate). Most responses were received within the first 48 hours after contact. The overall response rate was somewhat higher than Study 1, and the respondents appear to be similar to those in the sampling frame.

The final response rate from this sample compares favourably to published response rates for other studies. Roster et al (2004) reported a 27.9% response rate with a web-based survey administered to a directly comparable commercial market research panel. In a meta-analysis of 68 web-based surveys (predominantly not from commercial panels), Cook et al (2000) found a mean response rate of 34.7%, with a standard deviation of 15.7%. The outcome of this study (40.8% response and 33.6% full completion) is judged to be better than average for published studies, and suitable for fuller analysis.
The final cell sizes are closely balanced, and the cell sizes achieved are shown below:

<table>
<thead>
<tr>
<th>Cell Counts</th>
<th>Old</th>
<th>New</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Social Identity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primed</td>
<td>toi iho</td>
<td>108</td>
<td>108</td>
</tr>
<tr>
<td>NZ Made</td>
<td>113</td>
<td>109</td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>109</td>
<td>110</td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>330</td>
<td>327</td>
<td>657</td>
</tr>
<tr>
<td><strong>Social Identity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unprimed</td>
<td>toi iho</td>
<td>108</td>
<td>110</td>
</tr>
<tr>
<td>NZ Made</td>
<td>114</td>
<td>111</td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>108</td>
<td>107</td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>330</td>
<td>328</td>
<td>658</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>660</td>
<td>655</td>
<td>1315</td>
</tr>
</tbody>
</table>

Table 9-2: Cell Sizes

### 9.3. Study 2: Scale development for dependent variables

The scales for Study 2 are similar to those developed for Study 1. Six scales have been developed as dependent variables: *authenticity, liking* (in two versions), *perceived quality, value perceptions*, and *purchase intent*. Four other scales are used for manipulation checks: *newness, oldness, toi iho™, and New Zealand Made*. An additional scale of perceived social identity was developed for use as an independent variable.

Scale items were developed to measure the constructs under study in a valid and reliable manner. Items included ideas from existing research to the extent possible, but there is no known prior research which develops scales for the authenticity construct. New items were based upon exploratory studies, and also used items which proved reliable in Study 1. In all cases, an attempt was made to develop simple, short, unidimensional measures which could be evaluated on a 7 point Likert-type scale. A range of items was measured for each construct of interest. The final scales were empirically derived by combining those measurements which optimised measures of internal consistency and homogeneity. Scale development procedures are detailed in Chapter 6.
9.4. Statistical assessment of reliability

Scale development has used three key measures: Cronbach’s $\alpha$ as a measure of scale reliability, exploratory factor analysis as a measure of scale unidimensionality for scales with three or more items, and Pearson’s $r$ as a supplementary reliability measure for two-item scales. Their usage is detailed below.

9.4.1. Use of Cronbach’s $\alpha$ and Pearson’s $r$

Cronbach’s $\alpha$ (Cronbach 1951) is a key statistic which measures the internal consistency of items within a scale. This is generally referred to as reliability, which Nunnally (1967) defined as the extent to which measurements are repeatable. The statistic is large when there is a high degree of communality between items (which is equivalent to a low degree of item uniqueness). Cronbach’s $\alpha$ is generally defined as the mean of all split-half reliabilities, but this definition is strictly true only if the standard deviations of individual items are equal. If the standard deviations are not equal, then Cronbach’s $\alpha$ is a conservative measure, and it will underestimate reliability under these conditions (Cortina 1996).

In the scales which follow, differences in standard deviations for individual items are generally within 0.2 points on a 7 point scale, which should not have a material impact on reliability as measured by $\alpha$. All scales exceed Nunnally’s (1967) heuristic that a reliability of .70 or greater is generally sufficient. For 2 item scales, the Pearson’s $r$ measuring the correlation between the two items is also presented. In the case of a two item scale, the Pearson’s $r$ is identical to the item-total correlation, and is a more conservative measure than the Cronbach’s $\alpha$.

9.4.2. Scale unidimensionality

Reliability statistics measure repeatability, but they do not measure homogeneity or unidimensionality. Unidimensionality generally requires a high degree of reliability, but the inverse is not true. It is possible to have high reliabilities for a scale composed of several correlated measures of a multidimensional construct. For the analyses presented here, unidimensionality is important, and it has been
assessed with exploratory factor analyses for each proposed scale of 3 items or more. Three aspects of these factor analyses were considered. If the scale provides a) a single-factor solution (with an eigenvalue ≥ 1), b) that single factor accounts for the majority of the variance, and c) the second largest factor explains a substantially smaller proportion of the variance than the first factor, then the scale is judged to be sufficiently homogenous or unidimensional.

9.4.3. Summary: scale reliabilities

The table below summarises reliabilities and descriptive statistics for the total sample. Specific details on each scale are presented in Chapter 6.

<table>
<thead>
<tr>
<th>Scale name</th>
<th>Items</th>
<th>Cronbach’s α</th>
<th>Pearson’s r</th>
<th>Mean</th>
<th>s.d.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authenticity</td>
<td>3</td>
<td>.880</td>
<td>—</td>
<td>4.94</td>
<td>1.48</td>
</tr>
<tr>
<td>Liking – 7 item</td>
<td>7</td>
<td>.954</td>
<td>—</td>
<td>4.52</td>
<td>1.55</td>
</tr>
<tr>
<td>Perceived Quality</td>
<td>5</td>
<td>.922</td>
<td>—</td>
<td>4.74</td>
<td>1.39</td>
</tr>
<tr>
<td>Perceived Value</td>
<td>2</td>
<td>.931</td>
<td>.872</td>
<td>4.17</td>
<td>1.56</td>
</tr>
<tr>
<td>Purchase Intent</td>
<td>2</td>
<td>.933</td>
<td>.874</td>
<td>4.15</td>
<td>1.82</td>
</tr>
<tr>
<td>Newness</td>
<td>2</td>
<td>.807</td>
<td>.682</td>
<td>4.54</td>
<td>1.77</td>
</tr>
<tr>
<td>Oldness</td>
<td>2</td>
<td>.712</td>
<td>.553</td>
<td>3.57</td>
<td>1.76</td>
</tr>
<tr>
<td>toi iho™</td>
<td>4</td>
<td>.871</td>
<td>—</td>
<td>4.43</td>
<td>1.55</td>
</tr>
<tr>
<td>New Zealand Made</td>
<td>2</td>
<td>.731</td>
<td>.592</td>
<td>5.40</td>
<td>1.77</td>
</tr>
<tr>
<td>Social Identity</td>
<td>7</td>
<td>.942</td>
<td>—</td>
<td>5.91</td>
<td>1.24</td>
</tr>
</tbody>
</table>

Table 9.3: Reliability and Descriptive Statistics for Study 2

9.5. Manipulation checks

Prior to undertaking substantive analysis, it is necessary to ensure that the experimental manipulations were effective. A set of scales was developed to measure the manipulations themselves, and to allow statistical comparison to the non-manipulated cells. Specific scales were developed, and manipulation checks conducted, to assure that item age, toi iho™, and New Zealand Made were effectively communicated in the experiment.
The social identification variable was treated differently, as a priming task which rekindles latent perceptions of social identification. Because the manipulation was effectively accomplished with the programming of the questionnaire, a specific manipulation check is not required. Half of the cells received questions on social identification prior to seeing the stimulus, and half received the same questions at the end of the questionnaire. The manipulation was the presence or absence of questions prior to the experimental task. A scale for social identification was developed to serve as an independent variable.

9.5.1. Manipulation check: newness

A scale for newness was developed as a manipulation check. This scale contains two items, *new* and *recently made*, which generate a Pearson correlation of .682 (p<.01), and a Cronbach's $\alpha$ of .807.

Perceptions of newness were compared between the group which saw the new stimuli, and the group which saw the old stimuli. A full factorial between-subjects ANOVA was run with newness as the dependent variable. The manipulation of age perceptions was successful, and the results are suitable for further analysis. Results were highly significant ($F(1,1253) = 259.7$, $p<.001$), with mean perceptions of newness for the new cells of 5.28 and mean for old cells of 3.81.

The manipulation of newness has some limitations imposed by this particular experimental context. The fishhook design used as a stimulus is ancient, and the original function (as an actual fishhook) is now outmoded. Even though the new stimuli clearly state that the carving is new, it is possible that the traditional nature of the design may have attenuated judgements of newness. Empirically, however, the manipulation has worked sufficiently to allow further analysis.

9.5.2. Manipulation check: oldness

The manipulation of oldness is more straightforward than the manipulation of newness because it is more unidimensional in this context. The experimental stimuli for the old cells are stated to be old *per se* (made in the past), as well as having old
referents (design, tradition and function). A scale for oldness was developed as a manipulation check. This scale contains two measures, *old* and *antique*, which generated a Pearson’s *r* of .553 (p<.001) and Cronbach’s *α* of .712.

The manipulation of age perceptions was successful, and the results are suitable for further analysis. A full factorial between-subjects ANOVA was run with oldness as the dependent variable. Results were highly significant (*F*(1, 1253) = 325.0, p<.001), with mean perceptions of oldness for the new cells of 4.36 and mean for old cells of 2.76. This is judged to be sufficient for further analysis. In subsequent analyses, the oldness scale was used as an independent variable labelled as perceived age. This provides a more nuanced assessment of the perceived age of the stimulus that the categorical old/new manipulation itself.

**9.5.3. Manipulation check: toi iho™**

A scale for the toi iho™ certification was developed as a manipulation check. This scale checks that respondents perceived the toi iho™ certification, and that they also properly associated Maori with the certification. The scale contains four items. All measures were positively scaled, as originally measured: *certified as toi iho™*, *made by Maori*, *genuinely Maori*, and *made by a Maori carver*.

The scale is unidimensional. An exploratory factory analysis showed a single-factor solution (eigenvalue 2.89, accounting for 72.3% of the variance) with factor loadings ranging from .81 to .88. The four measures in total generate a Cronbach’s *α* of .871, with item to total correlations ranging from .67 to .76. The scale is optimised at four measures, as adding or eliminating any item reduces the overall reliability of the scale.

The manipulation of toi iho™ certification was successful, and the results are suitable for further analysis. A full factorial between-subjects ANOVA was run with the toi iho™ scale as the dependent variable. Results were highly significant (*F*(2, 1235) = 171.3, p<.001), with mean perceptions of toi iho™ for the toi iho™ cells of 5.44, versus mean for Control cells at 3.92, and mean for New Zealand Made cells at 3.93. Multiple comparison tests (Least Significant Difference and Bonferroni) show that
perceptions of toi iho™ in the toi iho™ cells are significantly higher than the New Zealand Made and Control cells, with p<0.001 for both comparisons.

9.5.4. Manipulation check: New Zealand Made

A New Zealand Made scale was developed to use as a manipulation check. Two items directly measure the certification: certified as New Zealand Made and made in New Zealand. The two measures together generated a Pearson’s r of .592 (p<.001), equivalent to a Cronbach's α of .731.

The manipulation of the New Zealand Made certification was successful, and the results are suitable for further analysis. A full factorial between-subjects ANOVA was run with the New Zealand Made scale as the dependent variable. Results were highly significant ($F_{(2, 1235)} = 32.0$, p<.001), with mean perceptions of New Zealand Made for the New Zealand Made cells of 5.83, versus mean for Control cells at 4.89, and mean for toi iho™ cells at 5.50. Multiple comparison tests (Least Significant Difference and Bonferroni) show that perceptions of New Zealand Made in the New Zealand Made cells are significantly higher than the toi iho™ cells (p<.006) and the Control cells (p<.001).

9.6. Antecedents, mediator, and outcome variables

As illustrated below, the model proposes that authenticity functions as a mediator between antecedent variables (certification, item age, social identity, and expertise) and outcome variables (liking, perceived quality, perceived value, and purchase intent). This is hypothesised as a partially-mediated relationship (Baron and Kenney 1986): the mediated effects of the antecedents on the outcome variable are stronger than the direct effects, but both types of effects may occur.
9.6.1. Correlations of key variables

Tables of correlations among the key scales are presented below, with each variable labelled as to its conceptual function (antecedent, mediator, or outcome). The hypotheses being tested suggest that authenticity is a direct antecedent of the outcome variables of liking, perceived quality, perceived value, and purchase intent. Because these constructs are conceptually linked, they are also positively correlated. For analysis purposes, variables were mean centred by subtracting the overall mean from each observation, yielding a transformed variable with an overall mean of zero and an unchanged standard deviation. This transformation of the variables into a mean deviation score will enable better interpretation of interaction effects (Aiken and West 1991). An additional benefit of mean centring is the reduction of any potential multicollinearity.
<table>
<thead>
<tr>
<th></th>
<th>Liking (outcome)</th>
<th>Authenticity</th>
<th>Perceived Age</th>
<th>Social Identity</th>
<th>Greenstone Expertise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liking (outcome)</td>
<td>.228</td>
<td>.629</td>
<td>.232</td>
<td>.243</td>
<td>.228</td>
</tr>
<tr>
<td>Authenticity (mediator)</td>
<td>.629</td>
<td>.232</td>
<td>.156</td>
<td>.175</td>
<td>.100</td>
</tr>
<tr>
<td>Perceived Age (antecedent)</td>
<td>.232</td>
<td>.156</td>
<td>.039</td>
<td>.086</td>
<td>.178</td>
</tr>
<tr>
<td>Social Identity (antecedent)</td>
<td>.243</td>
<td>.175</td>
<td>.039</td>
<td>.178</td>
<td>.178</td>
</tr>
<tr>
<td>Greenstone Expertise (antecedent)</td>
<td>.228</td>
<td>.100</td>
<td>.086</td>
<td>.178</td>
<td>.178</td>
</tr>
</tbody>
</table>

All correlations significant at p<.001, two-tailed

Table 9-4: Correlations of Antecedents and Authenticity (mediator) with Liking (outcome)

<table>
<thead>
<tr>
<th></th>
<th>Perceived Quality</th>
<th>Authenticity</th>
<th>Perceived Age</th>
<th>Social Identity</th>
<th>Greenstone Expertise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Quality (outcome)</td>
<td>.701</td>
<td>.239</td>
<td>.247</td>
<td>.165</td>
<td>.165</td>
</tr>
<tr>
<td>Authenticity (mediator)</td>
<td>.701</td>
<td>.156</td>
<td>.175</td>
<td>.100</td>
<td>.100</td>
</tr>
<tr>
<td>Perceived Age (antecedent)</td>
<td>.239</td>
<td>.156</td>
<td>.039</td>
<td>.086</td>
<td>.086</td>
</tr>
<tr>
<td>Social Identity (antecedent)</td>
<td>.247</td>
<td>.175</td>
<td>.039</td>
<td>.178</td>
<td>.178</td>
</tr>
<tr>
<td>Greenstone Expertise (antecedent)</td>
<td>.165</td>
<td>.100</td>
<td>.086</td>
<td>.178</td>
<td>.178</td>
</tr>
</tbody>
</table>

All correlations significant at p<.001, two-tailed

Table 8-5: Correlations of Antecedents and Authenticity (mediator) with Quality (outcome)

<table>
<thead>
<tr>
<th></th>
<th>Perceived Value</th>
<th>Authenticity</th>
<th>Perceived Age</th>
<th>Social Identity</th>
<th>Greenstone Expertise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Value (outcome)</td>
<td>.583</td>
<td>.265</td>
<td>.180</td>
<td>.166</td>
<td>.166</td>
</tr>
<tr>
<td>Authenticity (mediator)</td>
<td>.583</td>
<td>.156</td>
<td>.175</td>
<td>.100</td>
<td>.100</td>
</tr>
<tr>
<td>Perceived Age (antecedent)</td>
<td>.265</td>
<td>.156</td>
<td>.039</td>
<td>.086</td>
<td>.086</td>
</tr>
<tr>
<td>Social Identity (antecedent)</td>
<td>.180</td>
<td>.175</td>
<td>.039</td>
<td>.178</td>
<td>.178</td>
</tr>
<tr>
<td>Greenstone Expertise (antecedent)</td>
<td>.166</td>
<td>.100</td>
<td>.086</td>
<td>.178</td>
<td>.178</td>
</tr>
</tbody>
</table>

All correlations significant at p<.001, two-tailed

Table 9-6: Correlations of Antecedents and Authenticity (mediator) with Value (outcome)
9.7. A check of assumptions underlying the regression model

A number of assumptions must be met to ensure that an ordinary least squares [OLS] regression model will provide the best linear unbiased estimate. Different authors enumerate these underlying assumptions in somewhat different ways. This section reviews the extent to which this model satisfies the key regression assumptions in a parsimonious five assumption format (Kennedy 1985).

The first assumption considers specification errors, and assumes that the model is a linear function of the independent variables plus an error term. This model is sufficiently well-specified to satisfy the first assumption. The relationship between the independent and dependent variables is linear, and the beta weights of the independent variables are constant.

There is modest specification error in both the mediator and outcome regressions. Not all antecedents of authenticity are included as regressors, nor are all the precursors to liking, quality, value, or purchase intent. In a practical sense, these relationships are sufficiently complex that a model can never capture all of the relevant independent variables. The omission of some regressors is a common issue in social science research, and the implications can be seen in the relatively low R² values (and large disturbance terms) for many such models. Although there is a modest level of specification error here, OLS regression is reasonably robust to violations of this assumption.
The second assumption states that the meaning of the error term must be zero to avoid a biased intercept. This assumption is met.

The third assumption considers whether residuals have the same variance and are not correlated with each other. An examination of the plotted residuals shows no pattern, indicating that the homoskedasticity assumption has been met. Because this is a cross-sectional analysis, autocorrelation is not an issue.

The fourth assumption deals with measurement error, and states that observations of the independent variables should be repeatable without variation. There are several implications to this assumption, and they are all adequately addressed here. The sample is judged to be reasonably representative of the population. A random sample (n = 1315) was drawn from a large market research panel, and respondents were then randomly assigned to one of the 12 cells in the design. Quotas were managed to achieve balanced cell sizes. There are no factors which would cause observations not to be independent, and autocorrelation is not relevant because this is not a time series analysis. Finally, the level of measurement, using a 7 point interval scale, is adequate. Standard scale development techniques have been used to help reduce measurement error.

The fifth assumption states that there cannot be perfectly collinear relationships between independent variables, and sufficient degrees of freedom are available to obtain a reliable estimate. Multicollinearity statistics indicate no concerns with linear combinations. Correlations among variables are generally moderate. There are stronger correlations between authenticity and the outcome variables, particularly liking and perceived quality. As these variables have a causal relationship (perceptions of authenticity drive liking or quality perceptions), and they are conceptually distinct, this is not judged to be a cause for concern. Tolerance and the condition index are very low. The sample size is more than sufficient.

In summary, all of the major assumptions underlying OLS regression have been sufficiently satisfied. This lends confidence to the results of further analysis.
9.8. Study 2: Data analysis and hypothesis tests of direct effects

The hypotheses are summarised in graphical form below:

9.8.1. General direct effects of antecedents on outcome variables

It is expected that the effects of antecedent variables (certification, perceived age, social identity, and expertise) on the outcome variables (liking, quality, value, and purchase intent) will be partially mediated by authenticity. This suggests that results should show a strong direct effect of authenticity on the outcome variable, in combination with weaker direct effects of the antecedents. The relationships between the antecedents and the outcome variables are shown in the Figure 8-3 above, but have not been specifically hypothesised.
9.8.2. Overview of hypothesis testing procedures

Hypotheses were tested with ordinary least squares regression. Certification was operationalised as a categorical variable (present or absent), and treated as a dummy variable to measure the difference between the certified and non-certified conditions. Thus, a significant result for certification indicates that respondents who saw a certified stimulus rated it as significantly more authentic than those respondents who saw an uncertified stimulus.

In this analysis, social identity was treated as an interval-scaled measure which pooled all respondents, primed and unprimed. The difference between these groups is small enough to allow the data to be pooled. This model considered whether the level of a respondent’s social identity affected perceptions of authenticity. A separate analysis was conducted to determine whether the process of priming social identity affected perceptions of authenticity. All other constructs under test, both independent and dependent variables, are based on perceptions, and were operationalised at an interval-scaled level.

This analysis was structured to show not only the significance, but also the effect size of each variable. A series of nested models was constructed. For the mediator regressions, authenticity was used as the dependent variable. Model 1 started with one regressor, and each subsequent model added an additional regressor. The β weight shows the strength of the relationship between the independent and dependent variables, and the level of significance (if any) of that relationship. The ΔR² shows the incremental effect size (in terms of the amount of variance explained) for the variable added last, while holding all other effects constant.

A total of seven nested models were run for each of the toi iho™ and New Zealand Made conditions. For the control condition, only three models were run because certification and interactions with certification were omitted in these cells. All 17 of the regressions were highly significant with p < .001, which permits further analysis of individual regressors.
9.9. Results of mediator regressions

Table 8-8 below summarises all 17 mediator regressions. In all cases authenticity was the dependent variable, and the regressions examine the main and interactive effects of antecedents on authenticity. In the table below, variables are shown in the order they were entered into the regressions, and the numbers refer to different models. For example, in Model 3 below, social identity was entered first, followed by perceived age, and greenstone expertise was entered last.

<table>
<thead>
<tr>
<th>Mediator Regressions</th>
<th>Dependent Variable = Authenticity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Certification toi iho™</td>
</tr>
<tr>
<td></td>
<td>ΔR²</td>
</tr>
<tr>
<td>1. Social Identity</td>
<td>.029***</td>
</tr>
<tr>
<td>2. Social Identity,</td>
<td>.017***</td>
</tr>
<tr>
<td>Perceived Age</td>
<td></td>
</tr>
<tr>
<td>3. Social Identity,</td>
<td>.000</td>
</tr>
<tr>
<td>Perceived Age,</td>
<td></td>
</tr>
<tr>
<td>Greenstone Expertise</td>
<td></td>
</tr>
<tr>
<td>4. Social Identity,</td>
<td>.072***</td>
</tr>
<tr>
<td>Perceived Age,</td>
<td>.175***</td>
</tr>
<tr>
<td>Greenstone Expertise,</td>
<td></td>
</tr>
<tr>
<td>Certification [toi iho™ or NZ made]</td>
<td>.023***</td>
</tr>
<tr>
<td>5. Social Identity,</td>
<td>.002</td>
</tr>
<tr>
<td>Perceived Age,</td>
<td>.224***</td>
</tr>
<tr>
<td>Greenstone Expertise,</td>
<td></td>
</tr>
<tr>
<td>Certification,</td>
<td>.268***</td>
</tr>
<tr>
<td>Social Identity X Certification</td>
<td>-.066</td>
</tr>
<tr>
<td>6. Social Identity,</td>
<td>.007*</td>
</tr>
<tr>
<td>Perceived Age,</td>
<td>.219***</td>
</tr>
<tr>
<td>Greenstone Expertise,</td>
<td></td>
</tr>
<tr>
<td>Certification,</td>
<td>.267***</td>
</tr>
<tr>
<td>Social Identity X Certification</td>
<td>-.066</td>
</tr>
<tr>
<td>Perceived Age X Certification</td>
<td>.001</td>
</tr>
<tr>
<td>7. Social Identity,</td>
<td>.002</td>
</tr>
<tr>
<td>Perceived Age,</td>
<td>.219***</td>
</tr>
<tr>
<td>Greenstone Expertise,</td>
<td></td>
</tr>
<tr>
<td>Certification,</td>
<td>.270***</td>
</tr>
<tr>
<td>Social Identity X Certification</td>
<td>-.074</td>
</tr>
<tr>
<td>Perceived Age X Certification</td>
<td>.007**</td>
</tr>
</tbody>
</table>

* Significant at p<.05 ** Significant at p<.01 *** Significant at p<.001

Table 9-8: Mediator Regressions: Dependent Variable + Authenticity
9.9.1. Effects of certification

A key aspect of this research is learning whether certification affects perceptions of authenticity. It was proposed that:

**H1:** Certification will have a positive direct effect on perceived authenticity.

The key test for Hypothesis 1 is detailed as Model 4 in the Table 8-8 Mediator Regressions above. The increase in $R^2$ from adding either the toi iho™ or New Zealand Made certifications is significant at $p < .001$ versus the control conditions (no certification). The $\beta$ coefficient for each certification is also highly significant with $p < .001$. **Hypothesis 1 is supported.**

Further insight can be gained by comparing the beta weights for certification to those of other regressors. In the toi iho™ condition, the certification is highly consistent with the object being certified. Under these conditions, the $\Delta R^2$ of .072 and the $\beta$ coefficient of .023 are larger than the incremental effect of adding any other independent variable or interaction term. This means that the toi iho™ certification is the single biggest contributor to perceptions of authenticity among all the variables included in the model.

Results differ somewhat in the New Zealand Made condition, in which the certification is only moderately consistent with the certified object. Under these conditions, the $\Delta R^2$ of .023 and the $\beta$ coefficient of .153 are also highly significant ($p < .001$), but the effects are smaller than those of social identity or perceived age. There are two explanations for this result. First, the beta coefficient for New Zealand Made is smaller because it is a less effective certification in this context, and arguably less consistent with the certified item. Secondly, the New Zealand Made mark also brings less new additional information than the toi iho™ mark.
9.9.2. The relative value of different certifications

Certification marks vary substantially in nature, and it is logical to assume that different certifications could have different effects when applied to the same item. It was proposed that:

**H1a:** Items certified as toi iho™ will be rated as more authentic than items certified as New Zealand Made.

**H1b:** Items certified as toi iho™ will be rated as more authentic than items which are not certified.

**H1c:** Items certified as New Zealand Made will be rated as more authentic than items which are not certified.

Hypotheses 1a-1c were tested simultaneously using a one-way analysis of variance with a post-hoc Bonferroni multiple comparison test. The overall ANOVA was highly significant ($F(2, 1236) = 31.253, p<.001$). A table of mean scores for authenticity by group is presented below.

<table>
<thead>
<tr>
<th>Certification</th>
<th>Authenticity mean score</th>
<th>Standard error</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>toi iho</td>
<td>5.30</td>
<td>.0667</td>
<td>415</td>
</tr>
<tr>
<td>New Zealand Made</td>
<td>5.00</td>
<td>.0704</td>
<td>411</td>
</tr>
<tr>
<td>Control (no certification)</td>
<td>4.52</td>
<td>.0761</td>
<td>411</td>
</tr>
</tbody>
</table>

Table 9-9: Mean Scores for Authenticity by Certification Treatment

<table>
<thead>
<tr>
<th>(I) Certification</th>
<th>(J) Certification</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toi iho</td>
<td>NZ Made</td>
<td>.30117*</td>
<td>.10052</td>
<td>.008</td>
<td>.0602 - .5421</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>.78779*</td>
<td>.10052</td>
<td>.000</td>
<td>.5468 - 1.0288</td>
</tr>
<tr>
<td>NZ Made</td>
<td>Toi iho</td>
<td>-.30117*</td>
<td>.10052</td>
<td>.008</td>
<td>-.5421 - -.0602</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>.48662*</td>
<td>.10076</td>
<td>.000</td>
<td>.2451 - .7282</td>
</tr>
<tr>
<td>Control</td>
<td>Toi iho</td>
<td>-.78779*</td>
<td>.10052</td>
<td>.000</td>
<td>-1.0288 - -.5468</td>
</tr>
<tr>
<td></td>
<td>NZ Made</td>
<td>-.48662*</td>
<td>.10076</td>
<td>.000</td>
<td>-.7282 - -.2451</td>
</tr>
</tbody>
</table>

* The mean difference is significant at the 0.05 level.

Table 9-10: Bonferroni Multiple Comparison Test Results

232
The Bonferroni post-hoc test confirms Hypothesis 1a that toi iho™ certified items would be rated as significantly more authentic than New Zealand Made certified items (P<.05). Hypothesis 1b, that toi iho™ certified items would be rated as significantly more authentic than uncertified items, was also supported (P<.05). Finally, Hypothesis 1c, that New Zealand Made certified items would be rated as significantly more authentic than uncertified items, was also supported (P<.05). **Hypotheses 1a, 1b, and 1c are supported.**

### 9.9.3. The dollar value of certification

An additional test helped dimensionalise the value of certification in economic terms. Respondents were asked a single item measure for the price they would expect to pay, measured in New Zealand dollars. A one-way analysis of variance was conducted with a post-hoc Bonferroni multiple comparison test to assess the effects of differing certifications on pricing expectations.

The overall ANOVA was highly significant ($F(2, 1215) = 9.002, p<.001$), and a Bonferroni post-hoc test shows that toi iho™ certified items (at $66.62) worth significantly more than New Zealand Made certified items ($59.51), and New Zealand Made items worth more than uncertified items ($51.68). All differences are significant at p<.05.

This result is fairly dramatic, and is consistent with prior research in other contexts. In general, a relevant certification can exert a strong effect on expected price. This difference in value is managerially very important: it implies that respondents might pay as much as 29% more for a toi iho™ certified item compared to an uncertified item. The rank order of the certification groups is identical for both authenticity and expected price: toi iho™ highest, New Zealand Made in the middle, and uncertified items lowest. A table of mean expected prices by group is presented below.
Table 9-11: Mean expected price by certification treatment

<table>
<thead>
<tr>
<th>Certification</th>
<th>Expect to pay ($NZD)</th>
<th>Standard error</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>toi iho</td>
<td>$66.62</td>
<td>$2.60</td>
<td>407</td>
</tr>
<tr>
<td>New Zealand Made</td>
<td>$59.51</td>
<td>$2.57</td>
<td>404</td>
</tr>
<tr>
<td>Control (no certification)</td>
<td>$51.68</td>
<td>$2.31</td>
<td>407</td>
</tr>
</tbody>
</table>

Table 9-12: Bonferroni Multiple Comparison Test Results

<table>
<thead>
<tr>
<th>(I) Certification</th>
<th>(J) Certification</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toi Iho</td>
<td>NZ Made</td>
<td>7.11667</td>
<td>3.52848</td>
<td>.132</td>
<td>-1.3422 15.5755</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>14.93857</td>
<td>3.52195</td>
<td>.000</td>
<td>6.4954 23.3817</td>
</tr>
<tr>
<td>NZ Made</td>
<td>Toi Iho</td>
<td>-7.11667</td>
<td>3.52848</td>
<td>.132</td>
<td>-15.5755 1.3422</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>7.82190</td>
<td>3.52848</td>
<td>.080</td>
<td>-6.369 16.2807</td>
</tr>
<tr>
<td>Control</td>
<td>Toi Iho</td>
<td>-14.93857*</td>
<td>3.52195</td>
<td>.000</td>
<td>-23.3817 -6.4954</td>
</tr>
<tr>
<td></td>
<td>NZ Made</td>
<td>-7.82190</td>
<td>3.52848</td>
<td>.080</td>
<td>-16.2807 .6369</td>
</tr>
</tbody>
</table>

*. The mean difference is significant at the 0.05 level.

9.9.4. Effects of object age

A substantial body of research has found a positive association between the age of an object and its perceived level of authenticity. It is proposed that:

H2: Perceived product age will have a positive direct effect on perceived authenticity.

The key test for Hypothesis 2 is detailed as Model 2 in the Table 8-8 Mediator Regressions above. The increase in $R^2$ from adding age into the model is significant at $p < .001$ for both toi iho™ and New Zealand Made certification versus the control condition (no certification). The $\beta$ coefficient for age under each certification condition is also highly significant with $p < .001$. Hypothesis 2 is supported.
Further insight can be gained by comparing the beta weights for age to those of other regressors. In the toi iho™ condition, the certification is highly consistent with the object being certified. With toi iho™ certification, the $\Delta R^2$ of .017 and the $\beta$ coefficient of .132 for perceived age has a larger effect than greenstone expertise (which is not significant), but a smaller effect than either certification or social identity. This means that the toi iho™ certification is the single biggest contributor to perceptions of authenticity among all the variables included in the model.

Results differ somewhat in the New Zealand Made condition, in which the certification is only moderately consistent with the certified object. With New Zealand Made certification, perceived age has a $\Delta R^2$ of .038 and the $\beta$ coefficient of .196, both highly significant ($p < .001$). The $\Delta R^2$ and $\beta$ coefficient are essentially equal to those of social identity, and stronger than the effect of certification or the proposed interaction effects.
Extensive prior research indicates that age is associated with authenticity. Here, there is a difference in effect size of age under the toi iho™ and New Zealand Made certifications. This result suggests that under the toi iho™ condition, there is an interaction between perceived age and certification, which will be tested in Hypothesis 9 below. For hypothesis 2, it is sufficient explanation to suggest that the appropriateness of the toi iho™ mark lends the certification a greater effect on authenticity than age, while the less appropriate New Zealand Made certification has a smaller effect than age on authenticity.

9.10. General antecedents of perceived authenticity: individual factors

9.10.1. Effects of social identity

This research used a prototypical New Zealand item (a Greenstone carving) which is highly consistent with the typical New Zealand social identity of the sample. Under these conditions, it was expected that stronger social identity would drive stronger perceptions of authenticity. Hence:

H3: Social identity which is consistent with the nature of an item will have a positive direct effect on the perceived authenticity of that item.

The key test for Hypothesis 3 is detailed as Model 1 in the Table 8-8 above. The increase in $R^2$ from adding social identity to the model, for either certification condition versus the control condition (no certification), is significant at $p < .001$. The $\beta$ coefficient for social identity under each certification is also highly significant with $p < .001$. \textbf{Hypothesis 3 is supported.}

As noted above, in the toi iho™ condition, social identity has the second-strongest effect on authenticity (after certification) of any of the independent variables. In the New Zealand Made condition, social identity and perceived age are first equal in effect. This difference may be affected by the fact that the social identity questions prime and/or measure a general New Zealand identity, and this is more consistent with the New Zealand Made certification than with the toi iho™
certification. Because the measured construct is more consistent with the New Zealand Made certification, it is logical that it would have a stronger effect.

The effects of social identity are clear in this context, which specifically examined how New Zealand social identity would affect attitudes towards an iconic New Zealand product. These findings cannot be directly applied to tourists to New Zealand, an important customer group for greenstone carvings, because they have no New Zealand social identity. It is plausible that New Zealand certifications might create positive effects for tourists, but with a different mode of action. Instead of having an effect by reinforcing and drawing upon an existing social identity, these certifications could work for tourists by being simple signals of quality or authenticity. Further research in this area could be useful.

9.10.1.1. Effects of priming social identity

In addition to the direct effects of social identity, there is believed to be a potential effect of priming this construct. By asking social identification questions before the stimulus is seen, latent perceptions of social identity should be evoked and become more salient. This is expected to have an effect on perceptions of authenticity:

**P3a: Priming social identity which is consistent with the nature of an item will increase the perceived authenticity of that item.**

Hypothesis 3a was tested with a one-way analysis of variance, comparing all respondents in the primed social identity condition to all those in the unprimed condition. No differences by certification group were hypothesised, and therefore these were not tested. The overall ANOVA was significant \(F(1, 1235) = 5.819, p<.016\), indicating that the mean authenticity scores are significantly different in the primed and unprimed conditions.
As suggested in the hypothesis, the mean scores for authenticity in the primed group are significantly higher than those in the unprimed group. **Hypothesis 3a is supported.**

<table>
<thead>
<tr>
<th>Social identity</th>
<th>Authenticity mean score</th>
<th>Standard error</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unprimed</td>
<td>4.84</td>
<td>.0612</td>
<td>622</td>
</tr>
<tr>
<td>Primed</td>
<td>5.04</td>
<td>.0574</td>
<td>615</td>
</tr>
</tbody>
</table>

Table 9-11: Mean scores for authenticity by social identity priming treatment

9.10.2. Effects of expertise

Expertise has a well-established influence on decision-making. It is presumed to affect perceptions of authenticity as well. Hence:

**H4: Perceived expertise with the product category will have a positive direct effect on perceived authenticity.**

The key test for Hypothesis 4 is detailed as Model 3 in the Table 8-8 Mediator Regressions above. The Δ R^2 of .005 from adding expertise into the model is significant at p < .01 for the New Zealand Made certification versus the control condition (no certification). The β coefficient of .032 for expertise under the New Zealand Made condition is also significant with p < .05. However, neither the Δ R^2 nor the β coefficient are significant for expertise in the toi iho™ certification condition. This suggests a modest interaction between certification and expertise, which will be tested in Hypothesis 11 below.

The stronger results for the New Zealand Made certification make intuitive sense. The New Zealand Made mark provides little appropriate information for potential purchasers, and therefore they are likely to fall back on their pre-existing knowledge schema. In contrast, the toi iho™ mark provides a high level of assurance around the authenticity of the certified item. It warrants both country of origin and indigenous production. For some respondents, the presence of the toi iho™ mark could be an effective substitute for personal knowledge, which would in turn reduce the effects of expertise on perceived authenticity. The statistical results are consistent with this explanation.
However, it is also important to consider the effect of greenstone expertise in other regressions (Models 5-7, Table 8-8). For the New Zealand Made certification, expertise is only significant in Model 3, when it is the regressor entered last. In Model 4 and subsequent models, after certification is added, expertise drops to insignificance. In the toi iho™ condition, expertise is not significant in any of the mediator regressions. Because expertise is significant in only one out of 14 regressions, it is entirely possible that this result is due to chance.

Overall, expertise appears to have a minimal, if not nonexistent, effect on judgments of authenticity in Study 2. This is somewhat surprising, as expertise might be expected to serve a significant role in forming judgments around authenticity, and expertise had a small but statistically significant effect in Study 1. There is the possibility of design-related effect which is affecting these results. Study 2 used a non-traditional silver fern design for the carving, whereas Study 1 was a highly traditional design fish hook design. It is possible that expertise might interact differently with these alternate stimuli, and lead to different results. Given the contradiction in results between the studies, this lack of effect in Study 2 does merit further inquiry.

The scale development statistics for the greenstone expertise measure indicates an adequate level of reliability. Furthermore, there is good evidence that this scale is workable in the further results presented below (Models 10a-10d). These show that expertise does have a significant and consistent direct effect on the outcome variables of liking, quality, value, and purchase intent, for both the toi iho™ and New Zealand Made certifications.

Overall, this suggests that expertise does not have a strong effect on judgements of authenticity, but does have direct effects on affect (liking, quality, and value) for the object. There is a direct, but not mediated, relationship between expertise and the outcome variables. However, it is possible that the types of experience and expertise measured in the scale do not relate strongly to the type of knowledge consumers draw on to make judgments of authenticity. If this were true, a different operationalisation might yield different results.
As there is little prior work concerning these issues, further research is needed. **Hypothesis 4 was supported under the New Zealand Made condition, but not supported under the toi iho™ condition.**

### 9.11. Direct effects: consequences of perceived authenticity

Authenticity was modelled as a mediating variable in this study. In general terms, antecedent variables were expected to have direct effects on levels of authenticity, and authenticity perceptions would in turn have a direct effect on outcome variables (liking, perceived quality, perceived value, and purchase intent). It was expected that this would be a partially-mediated relationship, with stronger direct effects of authenticity on the outcome variables, and weaker (but still significant) direct effects of the antecedent variables (social identity, perceived age, expertise, and certification) on the outcome variables.

Four different tables of outcome regressions have been prepared, and they are presented below, followed by the relevant hypotheses. Each table includes the same mediator regressions analysed above for ease of comparison. Table 8-12 showing outcome regressions with liking as the dependent variable is presented below. The top half of the table is identical to Table 8-8, and is re-presented here for easier comparison of coefficients.
### Mediator Regressions

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Certification</th>
<th>Dependent Variable = Authenticity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>toi iho™</td>
</tr>
<tr>
<td></td>
<td>ΔR²</td>
<td>β</td>
</tr>
<tr>
<td>1. Social Identity</td>
<td>.029***</td>
<td>.171 ***</td>
</tr>
<tr>
<td>2. Social Identity,</td>
<td>.017***</td>
<td>.132***</td>
</tr>
<tr>
<td>Perceived Age</td>
<td>.171 ***</td>
<td>.196***</td>
</tr>
<tr>
<td>3. Social Identity,</td>
<td>.170 ***</td>
<td>.131***</td>
</tr>
<tr>
<td>Perceived Age,</td>
<td>.136***</td>
<td>.057***</td>
</tr>
<tr>
<td>Greenstone Expertise</td>
<td>.018***</td>
<td>.062***</td>
</tr>
<tr>
<td>Certification [ toi iho™ or NZ made]</td>
<td>.072***</td>
<td>.269***</td>
</tr>
<tr>
<td>4. Social Identity,</td>
<td>.224***</td>
<td>.214***</td>
</tr>
<tr>
<td>Perceived Age,</td>
<td>.135***</td>
<td>.194***</td>
</tr>
<tr>
<td>Greenstone Expertise,</td>
<td>.020***</td>
<td>.065***</td>
</tr>
<tr>
<td>Certification,</td>
<td>.268***</td>
<td>.154***</td>
</tr>
<tr>
<td>Social Identity X Certification</td>
<td>.002</td>
<td>-.066</td>
</tr>
<tr>
<td>5. Social Identity,</td>
<td>.222***</td>
<td>.219***</td>
</tr>
<tr>
<td>Perceived Age,</td>
<td>.219***</td>
<td>.220***</td>
</tr>
<tr>
<td>Greenstone Expertise,</td>
<td>.023***</td>
<td>.066***</td>
</tr>
<tr>
<td>Certification,</td>
<td>.267***</td>
<td>.154***</td>
</tr>
<tr>
<td>Social Identity X Certification</td>
<td>.002</td>
<td>-.117**</td>
</tr>
<tr>
<td>6. Social Identity,</td>
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<td>.222***</td>
</tr>
<tr>
<td>Perceived Age,</td>
<td>.219***</td>
<td>.222***</td>
</tr>
<tr>
<td>Greenstone Expertise,</td>
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<td>-.020</td>
</tr>
<tr>
<td>Certification,</td>
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<td>.151***</td>
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<tr>
<td>Social Identity X Certification</td>
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<td>-.077</td>
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<tr>
<td>Perceived Age X Certification</td>
<td>-.121**</td>
<td>-.044</td>
</tr>
<tr>
<td>Greenstone Expertise X Certification</td>
<td>.002</td>
<td>.060</td>
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</table>

### Outcome Regressions: Version A

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Certification</th>
<th>Dependent Variable = Liking</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td>toi iho™</td>
</tr>
<tr>
<td></td>
<td>ΔR²</td>
<td>β</td>
</tr>
<tr>
<td>8a. Social Identity</td>
<td>.055***</td>
<td>.235***</td>
</tr>
<tr>
<td>9a. Social Identity,</td>
<td>.043***</td>
<td>.207***</td>
</tr>
<tr>
<td>Perceived Age</td>
<td>.235***</td>
<td>.050***</td>
</tr>
<tr>
<td>10a. Social Identity,</td>
<td>.216***</td>
<td>.192***</td>
</tr>
<tr>
<td>Perceived Age,</td>
<td>.200***</td>
<td>.187***</td>
</tr>
<tr>
<td>Greenstone Expertise</td>
<td>.132***</td>
<td>.014*</td>
</tr>
<tr>
<td>Certification [ toi iho™ or NZ made]</td>
<td>.019</td>
<td>.056</td>
</tr>
<tr>
<td>11a. Social Identity,</td>
<td>.218***</td>
<td>.192***</td>
</tr>
<tr>
<td>Perceived Age,</td>
<td>.201***</td>
<td>.222***</td>
</tr>
<tr>
<td>Greenstone Expertise,</td>
<td>.136***</td>
<td>.184***</td>
</tr>
<tr>
<td>Certification,</td>
<td>.096***</td>
<td>.003</td>
</tr>
<tr>
<td>12a. Social Identity,</td>
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<td>.085***</td>
</tr>
<tr>
<td>Perceived Age,</td>
<td>.118***</td>
<td>.103***</td>
</tr>
<tr>
<td>Greenstone Expertise,</td>
<td>.125***</td>
<td>.145***</td>
</tr>
<tr>
<td>Certification,</td>
<td>.067***</td>
<td>.039***</td>
</tr>
<tr>
<td>Authenticity</td>
<td>.327***</td>
<td>.610***</td>
</tr>
</tbody>
</table>

**Total R² for Outcome Model**: .452 / .496 / .539

* Significant at p<.05  ** Significant at p<.01  *** Significant at p<.001

Table 9-12: Outcome Regressions Version A, DV= Liking
9.11.1. Effects of authenticity on liking

Four basic hypotheses are suggested on the direct effects of perceived authenticity. In essence, these hypothesise that consumers will have more positive affect towards more authentic items, and this will result in higher levels of the outcome variables: greater liking and perceived quality, higher perceived value, and increased purchase intent. Hence:

**H5: Perceived authenticity will have a positive direct effect on the liking of an object.**

The key test for Hypothesis 5 is detailed as Model 12a in the Table 8-12 Outcome Regressions Version A above. With liking as the dependent variable, the increase in $R^2$ from adding authenticity is significant at $p < .001$ versus the control conditions (no certification) for both types of certification. The $\beta$ coefficient for each certification is also highly significant with $p < .001$. **Hypothesis 5 is supported.**
9.11.2. Effects of authenticity on perceived quality

Authenticity is arguably one direct indicator of quality. It is proposed that:

**H6: Perceived authenticity will have a positive direct effect on the perceived quality of an object.**

The key test for Hypothesis 6 is detailed as Model 12b in the Table 8-13 Outcome Regressions Version B below. With perceived quality as the dependent variable, the increase in \( R^2 \) from adding authenticity is significant at \( p < .001 \) versus the control conditions (no certification) for both types of certification. The \( \beta \) coefficient for each certification is also highly significant with \( p < .001 \). **Hypothesis 6 is supported.**

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Certification</th>
<th>toi iho™</th>
<th>New Zealand Made</th>
<th>Control (none)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8b. Social Identity</td>
<td>( \Delta R^2 )</td>
<td>.057***</td>
<td>.238***</td>
<td>.061***</td>
</tr>
<tr>
<td></td>
<td>( \beta )</td>
<td>.217***</td>
<td>.247***</td>
<td>.055***</td>
</tr>
<tr>
<td>9b. Social Identity, Perceived Age</td>
<td>( \Delta R^2 )</td>
<td>.047***</td>
<td>.238***</td>
<td>.061***</td>
</tr>
<tr>
<td></td>
<td>( \beta )</td>
<td>.217***</td>
<td>.247***</td>
<td>.062***</td>
</tr>
<tr>
<td>10b. Social Identity, Perceived Age, Greenstone Expertise</td>
<td>( \Delta R^2 )</td>
<td>.005*</td>
<td>.228***</td>
<td>.115***</td>
</tr>
<tr>
<td></td>
<td>( \beta )</td>
<td>.073**</td>
<td>.239***</td>
<td>.003***</td>
</tr>
<tr>
<td>11b. Social Identity, Perceived Age, Certification [toi iho™ or NZ made]</td>
<td>( \Delta R^2 )</td>
<td>.024***</td>
<td>.231***</td>
<td>.109***</td>
</tr>
<tr>
<td></td>
<td>( \beta )</td>
<td>.156***</td>
<td>.097**</td>
<td>omitted</td>
</tr>
<tr>
<td>12b. Social Identity, Perceived Age, Certification, Authenticity</td>
<td>( \Delta R^2 )</td>
<td>.413***</td>
<td>.111***</td>
<td>.094***</td>
</tr>
<tr>
<td></td>
<td>( \beta )</td>
<td>.835***</td>
<td>.091***</td>
<td>.069***</td>
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<tr>
<td>Total ( R^2 ) for Outcome Model</td>
<td>546</td>
<td>.558</td>
<td>.614</td>
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</tr>
</tbody>
</table>

* Significant at \( p < .05 \)  ** Significant at \( p < .01 \)  *** Significant at \( p < .001 \)

**Table 9-13: Outcome Regressions Version B, DV= Perceived Quality**
9.11.3. Effects of authenticity on perceived value

There is extensive research indicating that certification increases perceived value and related measures, but there is little work on the effects of authenticity on value. It is proposed that:

**H7: Perceived authenticity will have a positive direct effect the perceived value of an object.**

The key test for Hypothesis 7 is detailed as Model 12c in the Table 8-14 Outcome Regressions Version C below. With perceived value as the dependent variable, the increase in $R^2$ from adding authenticity is significant at $p < .001$ versus the control conditions (no certification) for both types of certification. The $\beta$ coefficient for each certification is also highly significant with $p < .001$. **Hypothesis 7 is supported.**

<table>
<thead>
<tr>
<th>Outcome regressions: version C</th>
<th>Dependent Variable = Perceived Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent Variables</td>
<td>Certification</td>
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<tr>
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<tr>
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</tr>
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<td>10c. Social Identity,</td>
<td>.005**</td>
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<td>Greenstone Expertise</td>
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<tr>
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<tr>
<td>Certification [toi iho™ or NZ made]</td>
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</tr>
<tr>
<td>12c. Social Identity,</td>
<td></td>
</tr>
<tr>
<td>Perceived Age,</td>
<td></td>
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<tr>
<td>Greenstone Expertise</td>
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<td>Certification,</td>
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<tr>
<td>Authenticity</td>
<td></td>
</tr>
<tr>
<td>Total $R^2$ for Outcome Model</td>
<td>.404</td>
</tr>
</tbody>
</table>

* Significant at $p < .05$  ** Significant at $p < .01$  *** Significant at $p < .001$.

Table 9-14: Outcome Regressions Version C, DV= Perceived Value
9.11.4. Effects of authenticity on purchase intent

The preceding hypotheses suggested that stronger perceptions of authenticity would lead to greater liking and stronger value perceptions. It is consistent to hypothesise that these positive perceptions would also affect behavioural intent, hence:

**H8: Perceived authenticity will have a positive direct effect on the purchase intent for an object.**

The key test for Hypothesis 8 is detailed as Model 12d in the Table 8-15 Outcome Regressions Version D below. The increase in R² from adding authenticity is significant at p < .001 versus the control conditions (no certification) for both types of certification. The β coefficient for each certification is also highly significant with p < .001. **Hypothesis 8 is supported.**

<table>
<thead>
<tr>
<th>Outcome regressions: version D</th>
<th>Dependent Variable = Purchase Intent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Certification</td>
</tr>
<tr>
<td>Independent Variables</td>
<td>ΔR²</td>
</tr>
<tr>
<td>8d. Social Identity</td>
<td>.035***</td>
</tr>
<tr>
<td>9d. Social Identity,</td>
<td>.037***</td>
</tr>
<tr>
<td>Perceived Age</td>
<td></td>
</tr>
<tr>
<td>10d. Social Identity,</td>
<td>.033***</td>
</tr>
<tr>
<td>Perceived Age,</td>
<td></td>
</tr>
<tr>
<td>Greenstone Expertise</td>
<td></td>
</tr>
<tr>
<td>11d. Social Identity,</td>
<td>.004</td>
</tr>
<tr>
<td>Perceived Age,</td>
<td></td>
</tr>
<tr>
<td>Greenstone Expertise,</td>
<td></td>
</tr>
<tr>
<td>Certification [toi iho™ or NZ made]</td>
<td></td>
</tr>
<tr>
<td>12d. Social Identity,</td>
<td>.235***</td>
</tr>
<tr>
<td>Perceived Age,</td>
<td></td>
</tr>
<tr>
<td>Greenstone Expertise,</td>
<td></td>
</tr>
<tr>
<td>Certification,</td>
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<tr>
<td>Authenticity</td>
<td></td>
</tr>
<tr>
<td>Total R² for Outcome Model</td>
<td>.343</td>
</tr>
</tbody>
</table>

* Significant at p < .05  ** Significant at p < .01  *** Significant at p < .001

Table 9-15: Outcome Regressions Version D, DV = Purchase Intent
9.11.5. Summary of direct effects of authenticity

Taken together, these hypotheses suggest that stronger perceptions of authenticity of an object are likely to lead to more positive attitudes, and more favourable behavioural intentions towards that object. The findings strongly support this general principle. Stronger perceptions of authenticity have a highly significant effect on liking, quality and value perceptions, and on purchase intent. Furthermore, the strength of the effect that authenticity has on these dependent variables is much higher than the direct effects of social identity, age, expertise or certification on the outcome variables. Authenticity is a strong and significant driver of positive attitudes towards the object. The more authentic an object is seen to be, the more people like it, and the more likely they are to purchase it. These findings have important theoretical and managerial implications.
9.12. Interaction effects with certification

Three interaction hypotheses were suggested, that there would be significant interactions of perceived age x certification, social identity x certification, and expertise x certification. Results of these interactions are summarised in Table 8-16 below:

<table>
<thead>
<tr>
<th>Mediator Regressions</th>
<th>Dependent Variable = Authenticity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Certification</td>
</tr>
<tr>
<td></td>
<td>ΔR²</td>
</tr>
<tr>
<td>1. Social Identity</td>
<td>.029***</td>
</tr>
<tr>
<td>2. Social Identity,</td>
<td>.017***</td>
</tr>
<tr>
<td>Perceived Age</td>
<td></td>
</tr>
<tr>
<td>3. Social Identity,</td>
<td>.000</td>
</tr>
<tr>
<td>Perceived Age,</td>
<td></td>
</tr>
<tr>
<td>Greenstone Expertise</td>
<td></td>
</tr>
<tr>
<td>Certification [toi iho™ or NZ made]</td>
<td>.072***</td>
</tr>
<tr>
<td>4. Social Identity,</td>
<td>.002</td>
</tr>
<tr>
<td>Perceived Age,</td>
<td></td>
</tr>
<tr>
<td>Greenstone Expertise,</td>
<td></td>
</tr>
<tr>
<td>Certification,</td>
<td></td>
</tr>
<tr>
<td>Social Identity X Certification</td>
<td></td>
</tr>
<tr>
<td>5. Social Identity,</td>
<td>.007*</td>
</tr>
<tr>
<td>Perceived Age X Certification</td>
<td></td>
</tr>
<tr>
<td>6. Social Identity,</td>
<td>.002</td>
</tr>
<tr>
<td>Perceived Age,</td>
<td></td>
</tr>
<tr>
<td>Greenstone Expertise,</td>
<td></td>
</tr>
<tr>
<td>Certification,</td>
<td></td>
</tr>
<tr>
<td>Social Identity X Certification</td>
<td></td>
</tr>
<tr>
<td>7. Social Identity,</td>
<td>.227***</td>
</tr>
<tr>
<td>Perceived Age,</td>
<td>.219***</td>
</tr>
<tr>
<td>Greenstone Expertise,</td>
<td>.019</td>
</tr>
<tr>
<td>Certification,</td>
<td>.270***</td>
</tr>
<tr>
<td>Social Identity X Certification</td>
<td></td>
</tr>
<tr>
<td>Perceived Age X Certification</td>
<td></td>
</tr>
</tbody>
</table>

* Significant at p<.05  ** Significant at p<.01  *** Significant at p<.001

Table 9-16: Mediator Regressions (identical to Table 8-8)

All interactions were treated as suggested by Aiken and West (1991). Variables were mean centred (yielding a mean = 0 and a standard deviation identical to the uncentred variables) to allow a better interpretation of the interaction terms. Dummy variables were coded to allow comparison of toi iho™ versus control, and New Zealand Made versus control.
9.12.1. Interaction of product characteristics: age x certification

Age is known to affect perceptions of authenticity, and certification is presumed to do so. It is proposed that certification may reduce the effect of age, by substituting other salient information in the consumer judgement process. Hence:

**H9:** Perceived product age will have a stronger effect on perceptions of authenticity for uncertified items, and a weaker effect on perceptions of authenticity for certified items.

Hypothesis 9 has been tested in two ways. First, the relative size of the β coefficients is examined under the three certification conditions. Then, the interaction term of age x certification is tested for significance.

### Table 9-17: Effect of Age and Certification on Authenticity

<table>
<thead>
<tr>
<th>Condition</th>
<th>β</th>
<th>Δ R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncertified (control)</td>
<td>.213***</td>
<td>.045***</td>
</tr>
<tr>
<td>New Zealand Made</td>
<td>.196***</td>
<td>.038***</td>
</tr>
<tr>
<td>Toi iho</td>
<td>.132***</td>
<td>.017***</td>
</tr>
</tbody>
</table>

As summarised above, the direct effect of age on authenticity (shown in Model 2, Table 8-16) is positive and highly significant under all conditions (toi iho, New Zealand Made, and uncertified). Prior analysis has established that the toi iho™ mark is a stronger certification in this research context. Here, we can also see that as stronger certification is used, there is a significantly weaker effect of age on authenticity. Specifically, as certification increases in strength (from uncertified to toi iho), the effect of age weakens, as seen in sequentially smaller β coefficients, and sequentially smaller additions of explanatory power (Δ R²). This lends directional support for Hypothesis 9. Significance will be tested below.

The dummy variable for certification is tested as Model 4 in Table 8-16 (here, coded to allow comparison of toi iho™ or New Zealand Made versus the control group), and is highly significant (p<.001) for both certification conditions. This is the appropriate test to indicate that the simple slopes of the regression lines are
significantly different between each certification group and the control group (Aiken and West 1991).

The key test for Hypothesis 9 is detailed as Model 6 in the Table 8-16 Mediator Regressions above, considering the effects of adding age x certification into the model. For the toi iho™ condition, the increase in $R^2$ from adding the age x certification interaction term is significant at $p <.05$ versus control, and the $\beta$ coefficient is negative (as expected) and significant with $p <.01$. Results are not significant for the New Zealand Made condition versus control.

Based on the analysis of the interaction term, it is apparent that Hypothesis 9 is directionally correct, and partially supported (significant for toi iho™ only). The hypothesis suggests that age would have a weaker effect in the certified conditions, and the negative $\beta$ coefficients support this contention. There is an apparent counter-effect of certification on age: as perceived age increases for toi iho™ items, perceived authenticity decreases, resulting in the negative sign for the $\beta$ coefficient. The results for age x certification are not significant in the New Zealand Made condition, but it is worth noting that the $\beta$ coefficient is also negative for this certification. If the effect size were larger, this would also be consistent with the hypothesis.

There is a logical rationale for this result. Certification works by attaching additional information to an object. In this case, respondents perceive a conflict between the supplied age information and the certification information. In the old condition, product age was specified as 70 years, which is substantially older than the certification programmes. This leads to an apparent inconsistency: how could a programme certify an item that is older than the certification programme itself? The post-hoc certification of age is, in fact, commonly done with antiquities. Nonetheless, most certification is done contemporaneously with manufacture, and it is easy to see how a different approach might appear counterintuitive.
In summary, the rank-ordered effect of age on authenticity by certification condition supports Hypothesis 9, and interaction term is significant for toi iho, but not for New Zealand Made. **Hypothesis 9 is supported for the toi iho™ condition, but not supported for the New Zealand Made condition.**

9.12.2. Interaction of respondent characteristics: social identity x certification

Social identity was found to have a significant direct effect on perceptions of authenticity. The two certifications tested both have aspects which could easily overlap with an individual’s sense of social identity. The toi iho™ mark could resonate with a person who identifies with Maori, and the New Zealand Made mark might frame perceptions for anyone who has a strong Kiwi identity. The rationale for a potential interaction is plausible, but the hypothesis test does not support this idea.

**H10: Social identity will have a stronger positive effect on perceptions of authenticity for uncertified items, and a weaker positive effect for certified items.**

As noted above, the dummy variable for certification is tested in Model 4 (here, coded to allow comparison of toi iho™ or New Zealand Made versus the control group), and is highly significant (p<.001). This is the appropriate test to indicate that the simple slope of the regression lines is significantly different between the two groups (Aiken and West 1991).

The test for Hypothesis 10 is summarised as regression 5 in the mediator regressions Table 8-17 above, which considers the effects of adding social identity x certification into the model. The interaction term of social identity x certification is not significant for either the toi iho™ or New Zealand Made certifications. Social identity has direct effects, but no discernible interaction effects with certification. **Hypothesis 10 is not supported.**
9.12.3. Interaction of respondent characteristics: expertise x certification

Certification adds information which can be highly useful to less-experienced purchasers. More experienced purchasers, may prefer to rely on their own pre-existing knowledge schema, rather than use the information provided by a certification (East 1992). Accordingly, different effects are expected for these two groups:

H11: Certification will have a stronger positive effect on perceptions of authenticity for less-experienced purchasers, and a weaker positive effect for more-experienced purchasers.

The test for Hypothesis 11 is summarised as Model 7 in the mediator regressions Table 8-16 above. For the New Zealand Made condition, the increase in $R^2$ from adding the greenstone expertise x certification interaction term is significant at $p < .01$ versus control, and the $\beta$ coefficient is positive and significant with $p < .05$. Results are not significant for the toi iho™ condition versus control. Hypothesis 11 is supported for the New Zealand Made condition, but not for the toi iho™ condition.

9.13. Summary of findings in Study 2

9.13.1. Direct effects on authenticity

Certification, age, and social identity were found to have significant direct effects on perceived authenticity. Different types of certifications were shown to have different effects. The toi iho™ certification was most effective at influencing consumer perceptions in this product context, followed by the New Zealand Made certification. Both certifications helped create stronger perceptions of authenticity than the uncertified control condition.
Respondents’ perceived social identity was found to affect their perceptions of the authenticity of an object which is related to that social identity. In addition, the act of priming social identity was found to strengthen these effects. Expertise with the product category was expected to influence perceptions of authenticity, but the effects were marginal, and arguably absent. Expertise was found to have significant and consistent effects on the outcome variables of liking, perceived quality, perceived value, and purchase intent.

9.13.2. Direct, mediated and interaction effects on outcome variables

The direct effects of authenticity are quite apparent. Authenticity was found to have strong effects on affect (liking, perceived quality, and perceived value) and behavioural intention (purchase intent).

The antecedent variables (social identity, perceived object age, greenstone expertise and certification) had direct effects on both the mediator variable (authenticity), and on the outcome variables (liking, quality, value, and purchase intent). This is a partially mediated relationship, with the effects of the mediator (authenticity) on the outcome variables being much stronger than the direct effects of the antecedents on the outcome variable.

The interaction effects were less pronounced than the direct effects, with some significant interactions of age x certification, and expertise x certification, under some conditions. The effects of social identity x certification were not significant.

In total, 15 hypotheses (11 main hypotheses and 4 sub-hypotheses) were tested. Of these, 11 hypotheses were fully supported, 3 were supported for one type of certification but not the other, and one was rejected. A summary of the hypotheses and their support is presented in Table 8-18 following.
### Summary of Hypothesis Tests for Study 2

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>H1:</strong> Certification will have a positive direct effect on perceived authenticity.</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H1a:</strong> Items certified as toi iho™ will be rated as more authentic than items certified as New Zealand Made.</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H1b:</strong> Items certified as toi iho™ will be rated as more authentic than items which are not certified.</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H1c:</strong> Items certified as New Zealand Made will be rated as more authentic than items which are not certified.</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H2:</strong> Perceived product age will have a positive direct effect on perceived authenticity.</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H3:</strong> Social identity which is consistent with the nature of an item will have a positive direct effect on the perceived authenticity of that item.</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>P3a:</strong> Priming social identity which is consistent with the nature of an item will increase the perceived authenticity of that item.</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H4:</strong> Perceived expertise with the product category will have a positive direct effect on perceived authenticity.</td>
<td>Supported for New Zealand Made only</td>
</tr>
<tr>
<td><strong>H5:</strong> Perceived authenticity will have a positive direct effect on the liking of an object.</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H6:</strong> Perceived authenticity will have a positive direct effect on the perceived quality of an object.</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H7:</strong> Perceived authenticity will have a positive direct effect the perceived value of an object.</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H8:</strong> Perceived authenticity will have a positive direct effect on the purchase intent for an object.</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H9:</strong> Perceived product age will have a stronger effect on perceptions of authenticity for uncertified items, and a weaker effect on perceptions of authenticity for certified items.</td>
<td>Supported for toi iho™ only</td>
</tr>
<tr>
<td><strong>H10:</strong> Social identity will have a stronger positive effect on perceptions of authenticity for uncertified items, and a weaker positive effect for certified items. (Study 2 only.)</td>
<td>Not Supported</td>
</tr>
<tr>
<td><strong>H11:</strong> Certification will have a stronger positive effect on perceptions of authenticity for less-experienced purchasers, and a weaker positive effect for more-experienced purchasers.</td>
<td>Supported for New Zealand Made only</td>
</tr>
</tbody>
</table>

Table 9-18: Summary of Hypothesis Tests
Chapter 10. Discussion and Conclusions

10.1. Purpose and approach of the research

Authenticity is a concept of increasing importance to marketing, and arguably to society at large. However, the research around authenticity is contentious, and most research to date is interpretive. There is little previous work which uses quantitative methods to understand the antecedents and consequences of this important construct. This thesis has attempted to fill one part of this knowledge gap.

Similarly, certification is an under-researched topic. Certification has often been used by marketers to influence perceptions of authenticity for goods, services, experiences, and people, but the certification of authenticity has been neither theoretically nor empirically examined. Consequently, this research explicitly considered the nature of authenticity, the influence of certification as an antecedent of authenticity, and the subsequent consequences of that authenticity.

Quantitative exploratory research assessed the way in which the term authenticity is used in commercial contexts, as background to assist in the development of measurement scales. Based on this exploratory work, Studies 1 and 2 developed and assessed quantitative scales for measuring authenticity. These scales were then used to test a series of hypotheses about the antecedents of authenticity, including certification, and the consequences of authenticity on affect and behavioural intent.
10.2. Contributions to theory

10.2.1. Antecedents of authenticity

This research clearly indicates that general, non-category related factors are antecedents of authenticity. These include an intrinsic object-related factor (object age), an extrinsic object factor (the addition of certification), and individual observer-related factors (social identity and category expertise).

There is a broad range of category-specific antecedents to authenticity which were not included in this research design. Pounamu carvings have a rich tradition, and a range of different factors are known to contribute to a carving’s authenticity. A short list includes the basic design; how that design has been interpreted; the colour, pattern, source and quality of the greenstone; the identity and tribal affiliations of the carver; the purchase and gifting process, as well as other factors.

These category-specific issues were controlled for to the extent possible, by using a common and prototypical stimulus. Some of these aspects were measured to serve as control variables, but other category-specific antecedents were omitted to make the design tractable. This was a conscious experimental choice: the aim here is to consider broad factors which might generalise across categories, rather than develop a highly-detailed list of pounamu-specific indicators of authenticity.

All of these specific attributes are important in this product category, but less salient as general research issues. It is well-known that authenticity perceptions are triggered and enhanced by category-specific cues. However, the intent of this research was to identify and examine cues which would influence perceptions of authenticity across multiple categories. This includes developing a better categorisation of product-specific attributes, gaining further insights into the nature of individual factors which affect judgements of authenticity, and adding a deeper understanding of how these product attributes and individual factors interact in context.
This research offers an interesting and new finding that social identity can be an important contributor to perceptions of authenticity of products. In other words, this tells us that an inherent characteristic of an individual directly affects the apparent authenticity of an object which he or she observes. This finding illustrates a core and somewhat counterintuitive aspect of research into authenticity. Authenticity appears to be inherent in a product or service, but it is actually a perception which results from a complex, and not necessarily accurate, assessment process. An item may be highly authentic if assessed in objective terms, but not perceived as such. Equally, a product or service may be completely contrived, such as *Le Parc Disney* and Disneyland (Bamossy and Costa 2001, Gilmore and Pine 2007), yet still be viewed as authentic.

This authenticity judgement process is fundamentally similar to other consumer assessment and decision-making processes. The perception of authenticity results from the interaction of an object being judged, the perception and knowledge of the evaluator, and the context in which the evaluation occurs. An observer derives and processes cues, and then lends, or projects, a judgement of authenticity onto the object. This process is often affected by marketers, who work to “render” authenticity for the object (Gilmore and Pine 2007).

Social identity is an interesting antecedent of authenticity. It has no direct relationship with the object or service being evaluated, but it has strong effects on the evaluator, and it does affect that evaluator's perception of and reaction to the context. This is the first study known to have linked this construct directly to perceptions of authenticity.

Product age, social identity, and expertise may always be antecedents of authenticity (to a greater or lesser extent). This is not the case for certification, which is sometimes an antecedent of authenticity. Age, social identity, and expertise are inherent, and always present to some degree. Certification, on the other hand, is used only occasionally, and can obviously have no effect when it is omitted. Furthermore certification (essentially, the addition of objective third-party
information) is a generalisable concept, but it can only be operationalised in a context-specific way.

10.2.2. Certification of authenticity versus certification of cues

This research used certifications of the most common variety: trademarks which certify that the product contains specific attributes or has certain properties. In this case, the trademarks certify country of origin, and the ethnicity of the design and artisan. The certifications indicate that the product contains particular attributes which are cues to authenticity, and the certifications become cues of authenticity in themselves.

However, it is important to note that there is a second type of certification which was not addressed by this thesis. This second type of certification certifies authenticity per se. The Vatican, for example, goes through a process of verification for holy relics, and then issues a certificate which attests to the authenticity of the relic. The exact properties of the relic are not certified, but its underlying authenticity is. The process of provenance for an original artwork is similar. Branded products, particularly those which are prone to counterfeiting, sometimes use direct certification of authenticity. Microsoft has developed a programme called Microsoft Genuine Advantage, which certifies and verifies software as being Genuine Windows or Genuine Office. Pirated copies are essentially exact clones of the original software, as they must be to work properly. The Genuine programme does not actually certify that the product is different from pirated copies (though it may be): it actually certifies the legality of the software license, and assures customers that they can gain ongoing support.

At present, there is little research exploring the differences (if any) between certification of attributes which lead to perceptions of authenticity, and the certification of authenticity itself. We do not know whether a perception of authenticity deduced by an observer from cues is different (perhaps stronger, or more durable) than a perception which comes from simply accepting a piece of information. Further research into this area could provide useful insights into the
effects of different cognitive paths on the development of perceptions of authenticity.

10.3. Methodological contributions

Authenticity has been the subject of increasing research interest, but the approach to date has been almost exclusively qualitative and interpretive in nature. This prior is appropriate for understanding the depth and nuance of a complex concept, but unfortunately does not permit the comparison of different cues in terms of their relative influence on perceived authenticity. The potential for positivist research to contribute to assessments of interrelationships of concepts, considerations of the antecedents and consequences of perceived authenticity, and generalisation of ideas is demonstrated by the contribution of Grayson and Martinec (2004). However, because Grayson and Martin (2004) did not measure authenticity, researchers have not been able to comparatively examine multiple cues at once.

This research is believed to be the first study to systematically devise a measure of authenticity as a continuous variable, and to develop usable interval-level scales for the construct. It is clear that authenticity is highly context-dependent, and all research will need to occur within a specific frame of reference. However, the scaling work for this study suggests that many of the general measures of authenticity could be applicable across different product or service contexts for future research.

The authenticity scale development process used standard purification procedures which are well-known in the literature. As part of this work, an exploratory factor analysis of authenticity measures was conducted, which yielded a good solution with a simple structure. Furthermore, this solution conformed to expectations based on prior theory. In addition to developing measures for authenticity, this study attempted to produce generalisable results by employing a classic large sample quantitative study approach. This is a contribution because much of the work on authenticity is qualitative.
10.4. Managerial Implications

These findings are extremely relevant to managers, and can be summed up in three simple points:

1. **Authentic products are better.**

   Authentic products are better liked, viewed as higher quality, offer greater value and are more likely to be purchased than less authentic products. They can command a significant price premium. This means that managers should work to increase perceptions of authenticity for their offerings if this is appropriate for the product or service category.

2. **We can make the perceptions of products more authentic.**

   Perceptions of product authenticity can be strengthened using several strategies. Evoking customers’ social identity (if it is somehow consistent with the product) will increase perceptions of authenticity. Emphasising the age of a product (if it is old, or perhaps if it draws upon old traditions) will improve perceptions. Taking advantage of customers’ existing expertise and knowledge structures is probably advantageous, but attempting to tell them information which may conflict with these schemas is counterproductive.

3. **Certification is powerful.**

   Certification of appropriate attributes will increase perceptions of authenticity, as well as overall positive perceptions of the product. It lends distinctiveness and credibility to a brand. Certification will lead to stronger value perceptions, and should support a price premium.

   Taken together, these points indicate that an authentic product, especially one which is certified, should dominate a less authentic, uncertified product. The only possible exception is a competitive strategy issue: if the authentic and/or certified niches in a product category are already filled, becoming a similar imitative brand is unlikely to be beneficial.
10.4.1. Authenticity, prototypicality, and brand management

There is one area in which managerial implications intersect with theory development. Accelerating technology has led to a shortening of product lifecycles. The effective protection of intellectual property through patents or copyrights has eroded considerably. Competitors can now replicate product and service attributes, or improve upon them, very rapidly. The ability to maintain a distinctive point of difference based on the inherent product or service attributes has sharply diminished.

Under these circumstances, development of a stronger brand image is one of the few effective strategies. Competitors can quickly copy or improve upon almost any inherent attributes of a product or service. However, an effective brand image is likely to prove more distinctive, and far more durable, than an advantage based upon product or service attributes.

Authenticity is an ephemeral characteristic which can interrelate with brand image in unusual and effective ways. Authenticity can be generic, as it is with cultural artefacts, traditions, and practices. Under these circumstances, many different offerings which conform to norms would be considered authentic. In a branding context, however, authenticity often implies uniqueness. Developing an authenticity halo around the brand adds a level of protection which other competitors cannot match. If a brand succeeds in positioning itself as [the most] authentic, then other brands in the category are inherently less authentic. Managers have intuitively understood and used this approach for many years.

With careful management and the right circumstances, authenticity can become a major plank in a brand image. This is true for brands such as Coca-Cola ("The Real Thing") or Levi's 501 jeans. Notably, these authentic brands would also be considered the prototypical brands for the category (Carpenter and Nakamoto 1989). This may also lend clues to the evolution of authenticity within a particular product category.
Carpenter and Nakamoto suggest that the first major surviving brand typically becomes the prototype for the category. This prototypicality implies that the exemplar brand is the most authentic, and also sets the parameters for authenticity within that product category. Other brands must imitate the prototypical brand to increase their own authenticity (if they are using the most typical associations with authenticity). Paradoxically, this potential path to increasing authenticity does not appear to be feasible: it suggests that the way to build authenticity is through *imitating* another brand’s own authenticity: an inherently counterproductive, inauthentic strategy.

This implies the basis of a prototypical brand’s authenticity cannot be duplicated, and is almost absolute. Any imitation of authenticity is likely to lose the essence of the concept. It appears that once a prototypical brand becomes authentic, it will be difficult or impossible for others to compete with it on the same basis. Authenticity appeals for competing brands would need to develop a new and different basis to establish their own authenticity.

**10.4.2. Improving the value of product and service offerings**

Managers are always seeking approaches to increase the value and appeal of their products and services. For example, authenticity has become the core attribute for a broad range of authentic tourist offerings, ranging from cultural tourism through ecotourism. In many of these tourism offerings, being positioned as authentic can reduce costs by using existing infrastructure, and relying on pre-existing approaches. Simultaneously, the authenticity of these offerings increases their desirability and their economic value.

This research looked specifically at value and price attributes for certified and uncertified items. The findings are unequivocal. Greater authenticity is associated with higher perceived value, and also associated with significantly higher price expectations. Certification has a direct impact in this equation, with certifications that are more suitable and distinctive (such as the toi iho™ mark) yielding higher price premiums.
In the case of greenstone carvings, the expected price for the toi iho™ certified carving was a full 29% higher than for an otherwise identical uncertified carving. This finding is consistent with previous literature on certification, which shows certifying can add a substantial price premium to an item. It should be noted that a 29% increase in topline revenues is likely to lead to a much higher increase in the profitability of a given item, as the fixed costs are essentially the same as an uncertified item.

10.4.3. The economic importance of authenticity

If authenticity is important to individuals, it has the potential to be important economically. The authenticity-related themes of several successful movie genres were considered above. We can also deduce some measure of the economic importance of authenticity by considering other examples of fast-growing categories with strong authenticity attributes. These include a broad range of retro-styled products, ranging from cars to fashion to household items. The growth of organic food production has a link to the authenticity of older production methods. Natural fibres are in strong demand for clothing, and craft-brewed beers are the fastest growing segment of the category.

There is also significant growth of services with authenticity-related aspects. Cultural tourism and ecotourism are essentially searches for the authentic outside of one's normal frame of reference. The slow food movement which originated in Italy is an authentic alternative to commoditised restaurants. The growth of "world music," though inherently commodified, is driven by an underlying feel that it is authentic. A growing range of holistic health services also have strong authenticity attributes.

10.4.4. Specific contributions on ethnic marketing

Although there is extensive research related to country of origin effects in business, less is known about ethnicity of origin. This study looks both at country of origin (using the New Zealand Made certification), and also ethnicity of origin (using the toi iho™ trademark). The juxtaposition of these two marks helps
illuminates a complex question. Particular ethnicities are usually (but not always) associated with a single country. As such, there is substantial overlap between country identity and ethnic identity, but they are not congruent.

For example, Malaysian tourism advertising actively highlights the country’s mix of Malay, Indian, and Chinese cultural opportunities. Anecdotally, it appears that ethnicity-based marketing approaches are increasing. Some aspects of ethnic marketing have been prevalent in tourism for decades. Examples of ethnicity-based tourist destinations can be seen in the well-known ethnic enclaves within major cities: Chinatown in San Francisco, Little Italy in New York, and so forth. A growing trend appears to be an increase in ethnic-based marketing for indigenous peoples, particularly for cultural tourism. This includes the work being done by Maori groups in New Zealand, and the First Nations tribes of Canada. Thus, this research contributes by providing some initial insights into the relation of country and ethnicity-based factors related to ethnicity.

10.5. Public policy implications for the toi iho™ programme

In this particular context, there is a local public policy implication. The toi iho™ mark was developed by Creative New Zealand, a government agency which also funded its ongoing administration. A judgement was made that this certification program was ineffective, and the costs exceeded the benefits being provided. Accordingly, all government funding for the program was dropped, and it was effectively shut down. All the time, money, and work invested in the development of the certification mark and programme were lost.

It is entirely possible that the administration of the toi iho™ program was not effective in generating strong marketing outcomes. However, this research amply demonstrates that the certification process can bring real benefits to ethnic handicrafts. The toi iho™ trademark itself was shown to have real value, and that it can significantly enhance perceptions of and pricing opportunities for toi iho™ certified objects. It is apparent that the stated rationale for dropping the toi iho™
program, the ineffectiveness of the trademark, is not correct. Programme decisions were made in the absence of any careful research.

This work implies that with effective administration, the toi iho™ mark could have provided significant benefits to the Maori artisans who used it. It also implies that government could benefit from closer association with academic researchers when exploring issues of marketing policy.

10.6. The broader context: authenticity as a major cultural issue

Authenticity is important psychologically, philosophically, and culturally. In times of change, it is easy for individuals to feel unmoored. The rapid advance of globalisation, spurred on by economic change and radical new communication technologies, has led to a large amount of cultural dislocation. Just as sailors cannot navigate without reference points, people cannot function effectively without grounding. The authentic becomes a reference point against which other things are judged.

If alienation is a problem, then the search for authenticity can be one form of self-help. We can see the search for authenticity in the sustainability movement. Working towards sustainability is part of a dialectic, set up in opposition to unsustainable popular culture. If mass culture is plastic, disposable and unsustainable, then sustainable culture is real, durable, and authentic. There is a clear tie to older (and hence more authentic) practices such as free-range animals, organic production methods, and collection of heirloom plant varieties. Authentic values such as self-reliance (Emerson 1841) and frugality (Franklin 1758) are inherently part of the sustainability movement. The motivation for seeking sustainability is to fulfil deep needs for meaning and purpose, an objective far more complex than a simple reduction in environmental impact.

Scholars have explored related themes for decades. The historian Christopher Lasch made a major theme of America's movement towards a commodified and inauthentic culture. He decried the effect of modern capitalism on traditional institutions in The Culture of Narcissism (1979). In The Minimal Self (1984), Lasch
specifically explored the effects of mass industrial culture on personal authenticity. Three decades later, Lasch's critiques appear more salient than ever. Indeed, these concerns may have reached a critical stage. Even an ill-defined concept like "crisis of authenticity" returns almost 7.6 million results in the Google search engine. Broad concerns in this apparent crisis range from the arts to psychoanalysis to politics. Specific technical issues also show up, such as the meaning of authenticity in the age of bit-for-bit perfect digital “copies,” which are actually identical clones of, and indistinguishable from, the digital original. Taken together, these indicators show that authenticity is a major theme and subtext in a variety of contexts.

10.6.1. The potential dysfunctions of authenticity seeking

As noted above, authenticity has been a preoccupation for hundreds of years. One philosopher (Potter 2010, p. 13) has suggested that others have overemphasised the importance of authenticity: “… the search for the authentic is positioned as the most pressing quest of our age, satisfying at the same time the individual need for meaning and self-fulfilment and a progressive economic and political agenda that is sustainable, egalitarian, and environmentally friendly.” Many would agree with this statement, but the author of those words does not. Potter contends that authenticity is real but that it consists of “a way of talking about things in the world, a way of making judgements, staking claims, and expressing our relationships to one another, to the world, and to things. But those judgments, claims or preferences don’t pick out real properties in the world” (Potter 2010, p. 13-14). Potter is suggesting that because authenticity is not inherent in objects or situations, seeking authenticity is futile and discomforting.

This is possible, but it need not be the case. Authenticity is a perception, and it is phenomenologically real. And when the authenticity seeker finds authenticity, as many do, there is comfort, satisfaction, and meaning.
10.7. Suggestions for further research

10.7.1. Expanding the scope of models of authenticity

This study did not attempt to create a full model of authenticity. Although some antecedents of authenticity were modelled here, it is clear that there are many more which are not. The approach taken here was examining antecedents which could be generalised across categories, including age, social identity, and expertise. In contrast, prior research has generally concentrated on context-specific antecedents of authenticity. Clearly, both types of precursors are important. It is believed likely that the general antecedents could be effectively modelled in conjunction with context-specific antecedents. A better understanding of the interplay between context-specific antecedents of authenticity, and generalisable antecedents, will lend a better understanding of the underlying construct.

10.7.2. Increasing our understanding of certification

Although there is a fairly broad literature on certification in other fields, this topic has been largely ignored in marketing research. This lack of research becomes increasingly important, as it appears that certification of many types is becoming more prevalent as a marketing strategy. There are robust research findings to indicate that certification improves affect towards the certified object, increases the value of that object, and strengthens behavioural intentions for purchase. Indeed, this research reinforces these findings in the context of authenticity.

These concrete outcomes are very important for managers. For theory creation, however, they offer little insight into how such positive outcomes are created. Developing a better understanding of how individuals perceive and use certification information in making judgments will provide additional insight into consumer decision-making.
10.8. Research objectives: an assessment

The first proposed contribution of this research was theoretical, examining of how certification and perceived age act as antecedents which influence perceptions of product authenticity.

The second proposed research contribution was developing a stronger theoretical foundation for the interrelationships of certification and authenticity, including a better understanding of two non-mutually exclusive forms of certification (country certification and ethnic certification) on perceptions of product authenticity.

The third proposed contribution of this research was methodological. Standard scale development techniques were used to create a reliable new interval-level scale for perceived authenticity. This scale appears applicable to objects, services, and ideas, and will have utility for future research.

Finally, the fourth proposed contribution was provision of practical implications to marketing and advertising practitioners. The research demonstrates how antecedents can be used to increase perceptions of authenticity, and the benefits that companies might receive from such heightened perceptions. In particular, this research offers insight into the effectiveness of using the non-contextual cues of country certification, ethnic certification and perceived age.

This research used a classic approach. The studies began with an extensive review of the literatures on authenticity and certification. This informed empirical exploratory research using interpretive methods, content analysis, and multidimensional scaling. The factor structure of authenticity was assessed, and found to conform well to theoretical expectations. Based on this exploration, a series of hypotheses was suggested, and tested using medium and large samples. The majority of these hypotheses, outlining some of the key antecedents and consequences of authenticity, were supported.

This research is believed to have fulfilled its stated objectives. It is hoped that this work will also provide utility for future researchers who can extend these studies.
10.9. Epilogue

Issues of personal authenticity and meaning have always been central to the examined life. Authenticity has become a particularly salient issue for individuals in modern times. The United Nations recently increased its population projections, and now estimates that the world will grow to 10.1 billion people by the end of the century. As populations burgeon, migration increases, and technology continues to advance, it is inevitable that people will become less connected to the authentic places, traditions, and ideas which nurtured their ancestors.

People need authenticity, and they will need it even more in a crowded future. We can contribute to the human condition by continuing to understand what creates perceptions of authenticity, what corrodes those perceptions, and how to use authenticity appeals in constructive and ethical ways.
Appendix 1: Study 1 questionnaire

1. Participant information

I, Richard G. Starr, Jr., am a Senior Lecturer in Marketing at the University of Auckland, and a PhD candidate in Marketing supervised by Dr. Karen V. Fernandez.

I am trying to understand people's perceptions of authenticity and trademarks. This research is expected to take about 10 minutes of your time.

The research is anonymous. If you choose to participate, you can be entered into a lucky draw for a new Fourth Generation iPod Touch as a thank-you. Your contact details will be kept in strict confidence, and used only to inform the prize winner.

Participation in this research is entirely optional. You can choose not to participate at the bottom of this page, or by exiting the website at any time within the survey.

Please do not hesitate to contact me, my PhD supervisor, or my Head of Department, if you have any questions or concerns regarding this research.

My Contact Details
Mr. Richard G. Starr Jr.
Department of Marketing
University of Auckland
e-mail: rg.starr@auckland.ac.nz
Tel: (09) 373-7599 ext. 52403

PhD Supervisor
Dr. Karen V. Fernandez Professor
University of Auckland
e-mail: k.fernandez@auckland.ac.nz
Tel: (09) 373-7599 ext. 50790

Head of Department
Professor Roderick J. Brodie
Department of Marketing
University of Auckland
Tel: (09) 373-7599 ext. 37285
e-mail: r.brodie@auckland.ac.nz

If you have any concerns of an ethical nature you can contact the Chair of the University of Auckland Human Participants Ethics Committee at 373-7599 extn. 67630.

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE
Reference Number: 2009/655
1.

- [ ] I AGREE to participate in this research.
- [ ] I DO NOT agree to participate in this research
2. Would you buy this for a friend?

A new company is starting a global website to sell small gifts. They need to know which gifts will be most popular.

We want your opinion on a piece of jewellery. Consider it as a possible gift for a friend. Please read the description of each item, and answer all the questions about it.

To answer the questions, just put the cursor in the circle that best represents your opinion, and click the mouse button.

New!

Design
This fishhook or hei matau is new.

Material
It is made of greenstone, also called pounamu, a type of nephrite jade.

Symbolism
This carving is a Maori design based upon fishhooks used in the Pacific. It represents strength, good luck, and safe passage across water.

Trademark
This carving carries the Toi Iho trademark. It certifies that the carving is made by a Maori craftsman in the Maori style using typical materials and techniques.
1. This fishhook carving is:

<table>
<thead>
<tr>
<th>Item</th>
<th>Strongly Agree</th>
<th>Strongly Disagree</th>
<th>I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Made by pakeha</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Old</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Made in New Zealand</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recently made</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cheaply made</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carefully made</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Made by Maori</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Made offshore</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Certified as New Zealand Made</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antique</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Certified as Toi Iho Maori Made</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Certified as Made With Care</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
This fishhook or *hei matau* is new.

**Material**

It is made of greenstone, also called *pounamu*, a type of nephrite jade.

**Symbolism**

This carving is a Maori design based upon fishhooks used in the Pacific. It represents strength, good luck, and safe passage across water.

**Trademark**

This carving carries the *Toi Iho* trademark. It certifies that the carving is made by a Maori craftsman in the Maori style using typical materials and techniques.
1. I think this carving is:

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>I</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Historic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Made of the right material</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fake</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Real</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Authentic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Genuine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Made by a Māori carver</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Original</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Counterfeit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carved with traditional techniques</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Genuinely Māori</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Classic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A copy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A true piece of New Zealand</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
This is the same picture you saw before. It is repeated for your convenience.

**Design**
This fishhook or *hei matau* is new.

**Material**
It is made of greenstone, also called *pounamu*, a type of nephrite jade.

**Symbolism**
This carving is a Maori design based upon fishhooks used in the Pacific. It represents strength, good luck, and safe passage across water.

**Trademark**
This carving carries the *Toi Iho* trademark. It certifies that the carving is made by a Maori craftsman in the Maori style using typical materials and techniques.
1. I feel this necklace is:

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th></th>
<th></th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ugly</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Mass-produced</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>An inspired piece</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Attractive</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Unique</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Elegant</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>High quality</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>The proper colour</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Something I would wear</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>A typical design</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>A traditional style</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
This is the same picture you saw before. It is repeated for your convenience.

**New!**

**Design**  This fishhook or *hei matau* is new.

**Material**  It is made of greenstone, also called *pounamu*, a type of nephrite jade.

**Symbolism**  This carving is a Maori design based upon fishhooks used in the Pacific. It represents strength, good luck, and safe passage across water.

**Trademark**  This carving carries the *Toi iho* trademark. It certifies that the carving is made by a Maori craftsman in the Maori style using typical materials and techniques.
1. I feel this necklace is:

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>1</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guaranteed to be real</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Authorised</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Made of Asian greenstone</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Made of genuine New Zealand greenstone</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>A nice example</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Suitable for a woman</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Suitable for a man</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Authorised</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Has fine workmanship</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Kind of boring</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
This is the same picture you saw before. It is repeated for your convenience.

**Design**
This fishhook or *he i matau* is new.

**Material**
It is made of greenstone, also called *pounamu*, a type of nephrite jade.

**Symbolism**
This carving is a Maori design based upon fishhooks used in the Pacific. It represents strength, good luck, and safe passage across water.

**Trademark**
This carving carries the *Toi iho* trademark. It certifies that the carving is made by a Maori craftsman in the Maori style using typical materials and techniques.
1. 

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th></th>
<th>I</th>
<th></th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I would buy this carving.</td>
<td>☐</td>
<td></td>
<td>☐</td>
<td></td>
<td>☐</td>
</tr>
<tr>
<td>This carving is worth quite a bit.</td>
<td>☐</td>
<td></td>
<td>☐</td>
<td></td>
<td>☐</td>
</tr>
<tr>
<td>This is an expensive item.</td>
<td>☐</td>
<td></td>
<td>☐</td>
<td></td>
<td>☐</td>
</tr>
<tr>
<td>I like this carving.</td>
<td>☐</td>
<td></td>
<td>☐</td>
<td></td>
<td>☐</td>
</tr>
<tr>
<td>I would be proud to own this carving.</td>
<td>☐</td>
<td></td>
<td>☐</td>
<td></td>
<td>☐</td>
</tr>
<tr>
<td>This is a cheap item.</td>
<td>☐</td>
<td></td>
<td>☐</td>
<td></td>
<td>☐</td>
</tr>
<tr>
<td>I would buy this for a gift.</td>
<td>☐</td>
<td></td>
<td>☐</td>
<td></td>
<td>☐</td>
</tr>
<tr>
<td>This carving looks original.</td>
<td>☐</td>
<td></td>
<td>☐</td>
<td></td>
<td>☐</td>
</tr>
</tbody>
</table>

2. To buy this greenstone pendant from a catalog, I would expect to pay:
(Choose one price range from the drop-down menu below.)
7. Information about you

1. Please answer a few questions about yourself:

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>I</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I often wear greenstone (pounamu) myself.</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I know of the &quot;Made with Care&quot; brand.</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I know a lot about greenstone (pounamu).</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I am a very traditional person.</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I have bought greenstone (pounamu) in the past.</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I understand Maori customs and traditions (kaupapa Maori).</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I am a very modern person.</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I feel close to Maori culture.</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I like greenstone earrings.</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I know of the &quot;New Zealand Made&quot; brand.</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I know of the &quot;Toi Iho&quot; brand.</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

2. What is your highest level of education to date?

- [ ] Primary or secondary school
- [ ] School certificate
- [ ] Some polytech or university
- [ ] Polytech or university graduate
- [ ] Postgraduate certificate or degree
3. How do you describe your ethnic background? Please choose the best single answer.

- New Zealander of European descent
- New Zealand Moari
- New Zealander
- European
- Samoan
- Cook Islands
- Other Pacific Islander
- Chinese
- Indian
- Other Asian
- Other

If Other, please specify: 

4. Which of the following best describes where you live?

- Major city
- Provincial centre
- Smaller town
- Rural area
- Other (please specify)
5. What is your sex?
   ☐ Female
   ☐ Male

6. What is your current age?

7. THANK YOU VERY MUCH! This survey is complete.

As a thank you, we are offering all participants a chance to enter a lucky draw for a new 4th Generation 8Gb iPod Touch.

If you would like to be entered in the draw for an iPod touch, please enter your name and email address below. These will be kept in complete confidence, and used only to notify the prize winner.
8. Thank you for your consideration.

Thank you for your time.
Appendix 2: Study 2 questionnaire

Hello from SmileCity.

Thank you for agreeing to participate in this survey that is being carried out by TNS. To begin the survey, click on the button below. As you move through the survey please do not use your browser buttons - use the buttons at the bottom of each screen.

Please remember:

- Your views are important to us and your answers will be kept in the strictest confidence.
- None of the responses you give are directly linked to you as an individual. They are used purely for statistical purposes only. To see our privacy statement click here: Privacy Policy
- The survey incentives and expected length are outlined in the invitation e-mail.
- Even if you are unable to complete the survey you will still receive incentive points

To answer a question: Most questions have a round button to click or a tick box to check. Click on the box or button that best describes your answer to each question. Sometimes you may need to type in your answer in the spaces provided.

If you forget to answer a question, or miss part of a question, then a message reminding you that the question needs to be answered will appear. If this happens, you need to correct your answer to carry on with the survey. Sometimes you'll need to scroll across or down the page to see all of the possible answers.

To change an answer: For questions with a single choice, click on a different button. For questions with multiple choices (tick boxes), click again on your original answer to clear the box and make a new choice.

To go to the next question: When you've finished answering a question, click the >> button at the bottom of the screen.

To pause the survey and return to it later: Simply close the window and click on the link in the invitation e-mail to resume.

Dial-up users: If you are on a dial up modem or other slow connection, some of the questions may take a few moments to load. Please be patient.

Please click next if you agree to spend a reasonable amount of time completing this survey and to provide honest and thoughtful responses.

Please click the >> button to continue.
Participating
Participant Information

I, Richard G. Starr Jr., am a Senior Lecturer in Marketing at the University of Auckland, and a PhD candidate in Marketing, supervised by Dr. Karen V. Fernandes.

I am trying to understand people’s perceptions of authenticity and brand endorser expertise. This research is expected to take about 8 minutes of your time.

The research is anonymous. You will receive 80 Smile City Reward Points as a thank you. Participation in this research is entirely optional. You can choose not to participate at the bottom of this page, or by exiting the website at any time within the survey.

Please do not hesitate to contact me, my PhD supervisor, or my Head of Department, if you have any questions or concerns regarding this research.

My Contact Details
Mr. Richard G. Starr Jr.
Department of Marketing
University of Auckland
Email: gj.starr@auckland.ac.nz
Tel: (61) 937-7599 ext. 82403

PhD Supervisor
Dr. Karen V. Fernandes
University of Auckland
Email: k.fernandes@auckland.ac.nz
Tel: (61) 937-7599 ext. 88196

Head of Department
Professor Robert J. Brodie
Department of Marketing
University of Auckland
Tel: (61) 937-7599 ext. 87285
Email: r.brodie@auckland.ac.nz

If you have any concerns of an ethical nature you can contact the Chair of the University of Auckland Human Participants Ethics Committee at 373-7599 extn. 87850

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE
Reference Number 2009/035

☐ I AGREE to participate in this research
☐ I DO NOT agree to participate in this research

Technical Problems? Contact Us | Privacy Policy © 2011 by TNS
### Q1

This Silver Fern necklace is new.

**Material**
It is made of greenstone, also called pounamu, a type of nephrite jade.

**Symbolism**
The Silver Fern, which Maori call ponga, is a traditional and well-loved symbol of New Zealand. Travellers in the bush marked their path home by folding over the beautiful silver underside of the leaf. The All Blacks placed the Silver Fern on their uniform in 1893. The Silver Fern appears on flags, coins, stamps, military badges, and silver and greenstone jewellery.

**Trademark**
This carving carries the [New Zealand Made](#) trademark. It certifies that the carving is made by a New Zealand craftsman using traditional materials and techniques.

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A new company is starting a global website to sell small gifts. They need to know which gifts will be most popular.

We want your opinion on a piece of jewellery. Consider it as a possible gift for a friend. Please read the description of each item, and answer all the questions about it.

To answer the questions, just put the cursor in the circle that best represents your opinion, and click the mouse button.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7</td>
</tr>
</tbody>
</table>

#### This Silver Fern carving is:

- **Made in New Zealand**
- **Deeply made**
- **Certified as Tui the New Zealand Made**
- **Carefully made**
- **New**
- **Old**
- **Recently made**
- **Made by Maori**
- **Made of tahoe**
- **Not certified**
- **Certified as New Zealand Made**
- **Antique**
- **Made by pakeha**
This Silver Fern necklace is new.

Material: It is made of greenstone, also called pounamu, a type of nephrite jade.

Symbolism: The Silver Fern, which Maori call pango, is a traditional and well-loved symbol of New Zealand. Travellers in the bush marked their path home by folding over the beautiful silver underside of the leaf. The All Blacks placed the Silver Fern on their uniform in 1905. The Silver Fern appears on flags, coins, stamps, military badges, and silver and greenstone jewellery.

Trademark: This carving carries the New Zealand Made trademark, it certifies that the carving is made by a New Zealand craftsman using typical materials and techniques.

Scale:

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

I think this carving is:

- Real
- Authentic
- Made of the right material
- Made by a Maori carver
- A true piece of New Zealand
- Genuine
- Carved
- Carved with traditional techniques
This Silver Fern necklace is new.

Material  It is made of greenstone, also called pounamu, a type of nephrite jade.

Symbolism  The Silver Fern, which Maori call ponga, is a traditional and well-loved symbol of New Zealand. Travellers in the bush marked their path home by folding over the beautiful silver underside of the leaf. The All Blacks placed the Silver Fern on their uniform in 1953. The Silver Fern appears on flags, coins, stamps, military badges, and silver and greenstone jewellery.

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I feel this necklace is:

- A typical design  
- Mass-produced  
- High quality  
- Attractive  
- Unique  
- Ugly  
- A traditional style  
- Something I would wear  
- Elegant  
- An inspired piece  
- The proper colour
This Silver Fern necklace is new.

**Material**
It is made of greenstone, also called pounamu, a type of nephrite jade.

**Symbolism**
The Silver Fern, which Maori call pukeko, is a traditional and well-loved symbol of New Zealand. Travellers in the bush marked their path home by folding over the beautiful silver underside of the leaf. The All Blacks placed the Silver Fern on their uniform in 1883. The Silver Fern appears on flags, coins, stamps, military badges, and silver and greenstone jewellery.

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<table>
<thead>
<tr>
<th>Address categories</th>
<th>R1</th>
<th>R2</th>
<th>R3</th>
<th>R4</th>
<th>R5</th>
<th>R6</th>
<th>R7</th>
</tr>
</thead>
<tbody>
<tr>
<td>This carving looks original</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Would be proud to have this carving</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Would buy this for a gift</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>This carving is worth quite a lot</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>This is an exceptional item</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Would buy this variety</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Like the carving</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>This is a special item</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
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</table>

<table>
<thead>
<tr>
<th>Minority categories</th>
<th>R1</th>
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<th>R4</th>
<th>R5</th>
<th>R6</th>
<th>R7</th>
</tr>
</thead>
<tbody>
<tr>
<td>I understand Maori customs and traditions (Maori Word)</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Have a lot about Maori traditions</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Often wear greenstone jewelry</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>General knowledge</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Are a very modest person</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Are a very traditional person</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Have a lot about the &quot;Ko&quot; brand</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Know about Maori culture</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
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<th>R6</th>
<th>R7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have bought greenstone in the past</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Have the Maori warrior滨江</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>The Silver Fern is an important symbol for Maoris</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Like the Silver Fern flag</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Viewing greenstone is a sign of Kiwi identity</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
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This Silver Fern necklace is new.

**Material**
It is made of greenstone, also called pounamu, a type of nephrite jade.

**Symbolism**
The Silver Fern, which Māori call pohutakawa, is a traditional and well-oved symbol of New Zealand. Travellers in the bush marked their path home by folding over the beautiful silver underside of the fern. The All Blacks planted the Silver Fern on their uniforms in 1893. The Silver Fern appears on flags, coins, stamps, military badges, and silver and greenstone jewellery.

**Trademark**
This carving carries the New Zealand Made trademark. It certifies that this carving is made by a New Zealand craftsman using typical materials and techniques.
What is your highest level of education?  
- Primary or secondary school  
- Tertiary certificate or diploma  
- Bachelor or university graduate  
- Graduate or postgraduate certificate or degree  

What is the main ethnic group you belong to?  
- New Zealand Māori  
- European  
- Other Pacific Islander  
- Other Asian  
- Other (Specify)
What is your current age?

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Compensation
We would like to thank you for taking the time to complete our survey. Your opinions and responses are gratefully received and extremely important to us.

The insight which you have given us will be used to develop future products and services.

Your responses will be used at an aggregate level only, and as such we would like to assure you once again that your details will be used in the strictest of confidence and will not be passed on to any other party for any purpose other than that for which it was intended. If at any stage you wish to change your response please contact us at TNS.

The survey was conducted on behalf of TNS.

Once again thank you for your interest. To ensure that you receive further relevant surveys, please make sure that your details are always up to date.

(Please ensure to click the 'Next' button on the following screen to receive your points)
InVersionQuota

Please select questionnaire version for testing purposes only.

Will be randomly selected based on lowest achieved quota in LIVE version

*** Hidden variable - (InVersionQuota) questionnaire version ***

HIDDEN IN LIVE

- Version A - identity questions last - Toli tho (Old)
- Version A - Toli tho (New)
- Version A - New Zealand Made (Old)
- Version A - New Zealand Made (New)
- Version A - Control (none) (Old)
- Version A - Control (none) (New)
- Version B - identity questions first - Toli tho (Old)
- Version B - Toli tho (New)
- Version B - New Zealand Made (Old)
- Version B - New Zealand Made (New)
- Version B - Control (none) (Old)
- Version B - Control (none) (New)
References


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Klein, Naomi, (2000), No space, no choice, no jobs, no logo, New York: Picador.


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