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Entrepreneurial branding: measuring consumer preferences through choice-based conjoint analysis

Fabian Eggers · Felix Eggers · Sascha Kraus

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Abstract Start-ups face branding challenges. Not only are they confronted with the task of building brands from scratch, their newness also leads to a particularly high amount of customer uncertainty. This paper contributes to the emerging field of entrepreneurial branding by investigating start-up characteristics that signal trustworthy information to potential customers. An extended choice-based conjoint approach for modeling brand equity is used to explore the impact of different signals as initiated by established and new firms in the field of tablet computers. An empirical study reveals brand signals that have significant effects on purchase probabilities and are appropriate to overcome information asymmetries between start-ups and prospective customers.

Keywords Entrepreneurial branding · Signaling · Conjoint analysis · Start-ups · Tablet computers

Introduction

Start-up businesses share the specific characteristic of being new, which is a blessing and a curse at the same time (Brüderl and Schüßler 1990). On the one hand, newness generates positive connotations such as change, innovativeness, and creativity. On the other hand, in the eyes of prospective customers, new firms are less familiar and often perceived as less legitimate when compared to established market players (Singh et al. 1986; Choi and Shepherd 2005; Shepherd and Zacharakis 2003). Low familiarity and

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lacking knowledge lead to a high amount of perceived customer uncertainty. Buying from a new and therefore less familiar venture causes a higher amount of insecurity regarding the outcome of a business transaction. According to Rogers (1995), the uncertainty associated with newness is a distinctive aspect of the buying decision process. Research shows that, when faced with a situation of both high and low uncertainty which both have the same expected value, customers tend to prefer the less uncertain situation (Kahneman and Tversky 1979). Or in other words: the more uncertainty a consumer perceives, the less likely a decision to purchase becomes.

In order to improve the likelihood of a sale, new firms are required to increase familiarity, maximize customer knowledge, and lower prospective customers' perceived uncertainty. Uncertainty is a result of an uneven distribution of information among market partners. In our case, this asymmetric information allocation implies that the new firm is better informed about its own capabilities than the potential buyer (Stigler 1961; Akerlof 1970; Spence 1973). In signaling theory, two parties (here: the buyer and the start-up) can get around the problem of asymmetric information by having one party (in our case the seller) send a signal that reveals some piece of relevant information to the other party (the potential customer). The customer becomes aware of this new piece of information, interprets the signal and adjusts his purchasing behavior (Petkova et al. 2008).

Thus, uncertainty can be lowered by the party with an information surplus by signaling information that is considered relevant. Branding literature reveals that in situations of asymmetric and imperfect information, brands can serve as trust-building signals that deliver useful information to customers and therefore lower their perceived purchasing uncertainties (Erdem and Swait 1998). According to Keller's (1993) conceptual framework, familiarity with a brand is a necessary condition for holding favorable, strong, and unique brand associations in memory and, in turn, building customer-based brand equity. Brand equity relates to additional (beneficial) marketing outcomes such as a better product or company image or lower price sensitivity by consumers that are generated by a brand name. In other words, brand equity is the additional product or service value created by a brand (Keller 2003; Aaker 1991).

So firms in general and start-ups in particular should engage in brand building by (1) increasing familiarity and knowledge and (2) spreading information about themselves and their products and services offered (Hannan and Carroll 1992; Aldrich and Fiol 1994). Thus, the following questions arise: What kind of information should a start-up spread to decrease consumer uncertainty and therefore increase the likelihood to purchase? Are there certain company signals and dimensions of brand reputation that are perceived by customers as being important? Can these signals be used to explain the brand effect of a new firm?

We answer our research question by interviewing potential customers of new as well as established electronics companies in the field of tablet computers. Following concepts of the brand equity framework (Keller 1993; Keller and Lehmann 2006; Swait et al. 1993), we use an extended choice-based conjoint analysis model with brand-specific covariates for measuring consumer responses to experimentally varied product configurations to separate the effects of product characteristics from the brand effect and dimensions of brand familiarity. Conjoint analysis represents a tool to measure and decompose consumer preferences and can thereby serve to increase entrepreneurial success (McKelvie et al. 2011). Given its advantages, it is a surprising

finding that only very few researchers have used conjoint analysis in an entrepreneurship context so far, and those who do have primarily used metric, i.e. rating- or ranking-based conjoint methods.

This paper contributes to the emerging but still under-researched field of entrepreneurial branding (Rode and Vallaster 2005; Vallaster and Kraus 2011; Peters et al. 2010) as it shows how approaches in conjoint measurement are under-utilized in entrepreneurship, and demonstrates how they can be applied in such contexts. Further, by focusing on the potential customers of new ventures instead of just interviewing entrepreneurs and financiers, this paper distinguishes itself from many others in the realm of entrepreneurial marketing (see e.g. Hills and LaForge 1992; Morris et al. 2002; Hills et al. 2008; Kraus et al. 2012) and contributes to the emerging sub-field of new venture/SME branding (Fischer and Reuber 2007; Bresciani and Eppler 2010; Vallaster and Kraus 2011; Sohn and Freiling 2011).

Entrepreneurial branding

New ventures provide a particular and so far underresearched context to the research of corporate branding (Rode and Vallaster 2005). One of the major problems in the marketing of new ventures is that their brand (either corporate or product) is usually more or less unknown due to the early stages or newness of their business (Sohn and Freiling 2011) which often leads to high customer uncertainty. In this paper, we deal with state uncertainty, i.e. a special type of uncertainty that represents the inability to predict how the components of the environment are changing (Milliken 1987). State uncertainty is inherent to and occurs at high levels in dynamic, entrepreneurial contexts, which is particularly true for technology and customer demand uncertainties (Bettis and Hitt 1995; Eisenhardt and Martin 2000). Customer demand for new products typically depends on whether customers are familiar with the product and find it valuable (Aldrich and Fiol 1994). In the context of a new venture that launches a new product, state uncertainty is even higher because the customer is not only confronted with a new product, but also with a new organization and management team offering this product. So here, customer uncertainty is higher which in turn increases demand uncertainty for the new venture, which could make a business opportunity appear less attractive (McKelvie et al. 2011). This confronts new ventures with a particular dilemma that distinguishes them from established firms: Not only do start-ups face the problem of high state uncertainty, they typically also do not have the resources at hand to address these challenges (Morris et al. 2002).

Therefore, firms in general and start-ups in particular should engage in building brand familiarity by spreading information about themselves and their products and services offered (Aldrich and Fiol 1994; Hannan and Carroll 1992). Given that information is distributed asymmetrically with an information deficit on the consumer's end, and because of the limited budgets for marketing communications, it appears important to survey consumer information needs when evaluating the reputation of new ventures. In line with Shepherd, Douglas, and Shanley (2000) and existing studies on new venture branding (Witt and Rode 2005; Vallaster and Kraus 2011; Vallaster et al. 2014), we focus on three types of familiarity: consumers' familiarity with 1) a particular product offered, 2) the company itself, and 3) the company's top management.

In new or young ventures, the *product* brand is often equivalent to the overall *corporate* brand since they often only have one product (Eggers et al. 2013). Also, as discussed above, one of the major challenges of innovative start-ups is to predict whether customers will switch from a known to a new product. Customers might not be aware of the benefits of the new product (Rogers 1995), and even if they do, the adoption rate can still be low. Potential buyers might not know how to integrate the new product into existing infrastructures, which is particularly the case for technological innovations that interact with existing technology (Shepherd and Shanley 1998). This leads us to hypothesis 1:

H1: The higher customers' knowledge of products, the more likely they will be to purchase the (new) venture's market offerings.

Furthermore, companies that have established familiarity with potential customers, or in other words, that have established a positive reputation (being understood in the sense of a relative standing to its competitors, e.g. connected with image, esteem or prestige; see Deephouse and Carter 2005), will have advantages regarding the development and diffusion of new products. Thus, there is a positive relationship between customers' knowledge of corporate identity and new product success which should create a disadvantage for new ventures (Brown and Dacin 1997; Dowling 1993). This leads to hypothesis 2:

H2: The higher customers' knowledge of the organization, the more likely they will be to purchase the (new) venture's market offerings.

Potential customers' uncertainty regarding a new venture and its products may be lowered if customers know the individuals running the venture. Here, a well-known top management team will lend legitimacy to the organization (Suchman 1995). This is particularly true for companies marketing new and innovative products. Furthermore, personal backgrounds of the team members, such as qualifications and former experiences, can communicate trustworthy information to consumers (Shepherd et al. 2000). In small firms, it is very often the entrepreneur himself and/or the top management team and their respective track records that form the face(s) of the company that become associated with the corporate brand and reputation (Petkova et al. 2008; Fischer and Reuber 2007). This effect is described in hypothesis 3:

H3: The higher customers' knowledge of the organization's management, the more likely they will be to purchase the (new) venture's market offerings.

The longer the track record of the firm, i.e. the more established a firm becomes, the more familiar the consumers will be with its offerings. Put differently, a longer track record enables the venture to spread trustworthy information better (Fischer and Reuber 2007). Therefore we conclude:

H4: The more customers perceive the firm as an established venture, the more likely they will be to purchase the (new) venture's market offerings.

Finally, customer choice behavior can differ between products based on the importance of the product to the customer. Thus, product importance can moderate the relationship

between customer uncertainty and the decision that is made (Bloch and Richins 1983; Holak and Lehmann 1990; Shepherd and Zacharakis 2003). This leads to the following:

- H5: The degree of product importance moderates the relationship between the probability of purchase and customer knowledge of the (a) product, (b) organization, and (c) management as well as (d) the perceived company category.

Conceptual framework

We integrated our hypotheses into the conceptual framework depicted in Fig. 1. Specifically, we analyze consumer choices between different product offerings. The theoretical framework for choice behavior is *random utility theory*, which states that the overall utility U of individual i for an object j is a latent construct that includes a systematic component V and an error component ε , which catches all effects that are not systematic and consequently not accounted for (Manski 1977):

$$U_{ij} = V_{ij} + \varepsilon_{ij}. \quad (1)$$

According to the theory, consumers implicitly compare the utility of the choice options and choose the alternative that exhibits the highest utility. The systematic utility of the alternatives can be estimated with the multinomial logit (MNL) model (e.g. McFadden 1974; Islam et al. 2007; Louviere et al. 2000). Accordingly, choosing an object a from a choice set with J alternatives is represented by the MNL model in terms of choice probabilities *prob*:

Fig. 1 Conceptual framework

$$prob_i(a|J) = \frac{\exp(V_{ia})}{\sum_j \exp(V_{ij})}. \quad (2)$$

Thus, modeling the utility of different product offerings then allows a prediction of their choice probabilities.

In order to decompose the overall utility, we apply choice-based conjoint (CBC) analysis (Louviere et al. 2000; Louviere and Woodworth 1983). In CBC studies, consumers repeatedly choose their most preferred option from a subset of alternatives, which are described as combinations of attributes, each having different levels. These attribute levels are varied systematically in the conjoint experiment in order to reveal their impact on the systematic utility component V . In a general product choice context, it can be assumed that the overall utility V is a linear combination of the part-worth utilities β of the brand b and other product attributes X (e.g., price):

$$V_{ij} = \beta_b b_j + \beta_X X_j. \quad (3)$$

In our research context, we assume that the brands differ in terms of perceived product familiarity (fam), knowledge of the organization (kno), knowledge of the management (knm), and company category ($ccat$), i.e., whether or not the company is an established venture. Consumers differ in their brand perception which is accounted for in our model in terms of alternative-specific covariates:

$$V_{ij} = \beta_b^r b_j + \beta_X X_j + \gamma_{fam} Fam_{ib} + \gamma_{kno} Kno_{ib} + \gamma_{knm} Knm_{ib} + \gamma_{ccat} Ccat_{ib}, \quad (4)$$

where γ represents estimates of the marginal effect of perceived familiarity, knowledge of the organization, knowledge of management, and company category on the overall utility of the tablet computer and, hence, choice probability. With these additional components the model integrates objective product features and subjective perceptions.

In the extended equation, the brand effect β_b^r has to be seen as a residual value that is not explained by the brand-specific constructs. Consequently, the relationship between the brand effect of Eq. (3) β_b and the compound brand effect of Eq. (4) is:

$$\beta_b = \beta_b^r + \gamma_{fam} Fam_{\bar{b}} + \gamma_{kno} Kno_{\bar{b}} + \gamma_{knm} Knm_{\bar{b}} + \gamma_{ccat} Ccat_{\bar{b}}. \quad (5)$$

Finally, in order to test the moderating effect η of perceived product importance, we include interaction effects between importance (imp) and the brand-specific covariates:

$$V_{ij} = \beta_b^r b_j + \beta_X X_j + \gamma_{fam} Fam_{ib} + \gamma_{kno} Kno_{ib} + \gamma_{knm} Knm_{ib} + \gamma_{ccat} Ccat_{ib} \\ + \eta_{imp,fam} Imp_i \cdot Fam_{ib} + \eta_{imp,kno} Imp_i \cdot Kno_{ib} + \eta_{imp,knm} Imp_i \cdot Knm_{ib} + \eta_{imp,ccat} Imp_i \cdot Ccat_{ib} \quad (6)$$

Methodology

Conjoint analysis in entrepreneurship research

Lohrke et al. (2010) explored the use of conjoint analysis in entrepreneurship research. With a literature review ranging from 1999 to 2008, they identified and reviewed 18

conjoint analysis studies in the wider field of entrepreneurship and highlighted that, although conjoint analysis in general has unique benefits, it is still a nascent technique in this domain. In addition to their analysis, we would like to point out that all reviewed applications of conjoint analysis in entrepreneurship research use traditional rating- or ranking-based conjoint methods – and not CBC, although the latter shows conceptual advantages.¹ Analyzing choices instead of ratings is beneficial because choices are an integral part of people's everyday life and are “natural” manifestations of a person's preference. Additionally, by using choice tasks with different alternatives to choose from, CBC adequately considers the effect of competition so that respondents need to make trade-offs in order to decide. This trade-off is not necessary when rating products separately from another.

Experimental design

We used tablet computers as an exemplary research context in the conjoint experiment. To test our hypotheses, we needed a market which consists of established and new firms, i.e. existing and new brands. The emerging market of tablet computers was an ideal choice. Each tablet computer stimulus was described by three attributes: brand, storage (in gigabytes), and price. Each of these attributes constituted an experimental factor with four varying levels according to a 4^3 factorial design (Table 1).

The attribute levels were selected in a way allowing them to represent the current market in terms of storage space and price, the well-established brands found there (e.g. Apple's iPad), as well as products from start-up companies (e.g. Fusion Garage's JooJoo).

We used a total of eight choice sets that presented three tablet options to choose from (see Fig. 2 for an example). Accordingly, each attribute level was presented six times. The stimuli, although allocated randomly to the choice sets, were controlled for the efficiency criteria of level balance, orthogonality, and minimal overlap (Kuhfeld et al. 1994; Huber and Zwerina 1996).

Measures

In order to account for the consumer's perceptions of product familiarity, knowledge of the organization, management, and company category of the offered brand we included rating scales pertaining to these items (Table 2). Note that by using these ratings scales we assume that consumers can differentiate between different levels of familiarity and knowledge. For example, knowledge of the organization can differ in terms of knowledge of the location, production facilities, number of employees, financial data, etc. We therefore think that using rating scales instead of binary variables (e.g., knowledge: yes/no) is better able to account for these multifaceted constructs.

To measure product importance, we constructed an index of the items 1) interest in tablet computers (5-point rating scale), 2) importance of finding the best tablet computer for one's needs (5-point rating scale), 3) regret about making a bad decision

¹ Although Franke et al. use choice models for estimation, i.e. a probit model (2006) and an exploded logit model (2008), their surveys are based on ranking-based conjoint analysis and do not elicit choices from choice sets, which is a cognitively different task.

Table 1 Attributes and levels of the conjoint experiment

Attribute	Level 1	Level 2	Level 3	Level 4
Brand	Apple iPad 2 (MAC OS)	Samsung galaxy tab (google android)	JooJoo (custom linux)	Microsoft courier ^a (custom windows)
Storage	32 GB	64 GB	96 GB	128 GB
Price	\$ 399	\$ 499	\$ 599	\$ 699

^a Microsoft Courier was the codename for a rumored Booklet PC from Microsoft, first reported on in 2008

regarding a tablet computer purchase (5-point rating scale), and 4) willingness-to-pay (absolute value).

Results

Subjects

We sent email invitations for our survey to young professionals holding a first degree who were seen as an appropriate target segment for tablet computers (The Nielsen Company 2010). Tablet computer demand is a global phenomenon with strong growth in every developed international market (Morgan Stanley 2011). Therefore we decided to conduct an international study with two survey variants: an English questionnaire for participants from the USA, Netherlands, and Spain ($n=45$; 39.8 %) and a German questionnaire for participants from Germany, Austria, Switzerland, and Liechtenstein ($n=68$, 60.2 %). The sample consisted of 62.8 % male, and 37.2 % female respondents. Their age ranges were: 25 years or younger (42.5 %), 26 to 35 years (49.6 %), and older than 35 years (7.9 %). A total of 113 respondents completed the survey.

Descriptive statistics

Important for the estimation of model 2 and testing of our hypotheses are the respondents' ratings of the brand-specific constructs. Table 3 shows that there is considerable variation in the ratings, and that the constructs are not necessarily interrelated, e.g. good knowledge of the organization does not imply good knowledge of the management (Samsung). In the same way, familiarity with the product does not necessarily imply knowledge of the organization/management (Microsoft). Although, on average the constructs show significant correlation (see Table 4), adding the covariates to the

Which of the following tablet computers would you prefer?

	Tablet 1	Tablet 2	Tablet 3
Brand:	JooJoo (Custom Linux)	Microsoft Courier (Custom Windows)	Apple iPad 2 (Mac OS)
Storage:	96 GB	64 GB	128 GB
Price:	\$ 599.-	\$ 499.-	\$ 699.-

Fig. 2 Exemplary choice set

Table 2 Operationalization of brand perception constructs

Construct	Operationalization	Scale
Familiarity with product (<i>Fam</i>)	“Are you familiar with the following <u>tablet computers</u> offered by the companies above?”	5-point rating scale: 0 = Completely unfamiliar with the product or its benefits 4 = Highly familiar with the product and its benefits
Knowledge of organization (<i>Kno</i>)	“How well do you know these <u>organizations</u> or any entity directly associated with this organization?”	5-point rating scale: 0 = No knowledge or experience with the organization 4 = Considerable knowledge and experience with the organization
Knowledge of management (<i>Knm</i>)	“How much do you know about the <u>management or the founders</u> of these organizations?”	5-point rating scale: 0 = No knowledge of the management of the organization 4 = Considerable knowledge of the management of the organization
Company category (<i>Ccat</i>)	“How would you categorize these organizations?”	5-point rating scale: 0 = Established corporation 4 = Start-up

orthogonal experimental design leads to no critical variance inflation factors ($VIF_{fam}=1.3$, $VIF_{kno}=2.8$, $VIF_{knm}=1.9$, $VIF_{ccat}=1.7$).

Conjoint models

We estimated the MNL models on an aggregate level with a maximum likelihood procedure. We used effect coding for the levels of brand, storage, and price, allowing the preferences to be interpreted as a deviation from a hypothetical mean of zero. The γ and η estimates are represented by a linear model, i.e. incrementing the rating by one increases the overall utility by the given value.

We first present the estimation for a benchmark model that consists of estimates for the product attributes only (according to Eq. 3). We compare this model with an extended model in which we account for the consumers' familiarity and knowledge of the company. The estimation results are presented in Table 5.

Table 3 Respondents' ratings of brand/product and its manufacturing company

	Apple iPad 2 / Apple	Samsung galaxy tab/samsung	JooJoo/fusion garage	Microsoft courier/ microsoft
Familiarity with product (<i>Fam</i>)	3.02 (1.14)	1.65 (1.36)	.32 (.82)	.42 (.94)
Knowledge of organization (<i>Kno</i>)	3.07 (1.07)	2.28 (1.17)	.31 (.80)	3.08 (.96)
Knowledge of management (<i>Knm</i>)	2.77 (1.11)	.55 (.96)	.24 (.69)	2.70 (1.11)
Company category (<i>Ccat</i>)	.13 (.57)	.31 (.72)	2.75 (.92)	.08 (.36)

Standard deviation in parentheses

Table 4 Correlation analysis

	Fam	Kno	Knm	Ccat
Fam		.491**	.328**	-.312**
Kno			.678**	-.647**
Knm				-.467**
Ccat				

** Correlation is significant at the .01 level

Both models show face validity regarding a positive relationship between preferences and storage size, as well as a negative relationship between preferences and price. Moreover, in the benchmark model, Apple represents the most preferred product, followed by Samsung, Microsoft, and JooJoo. In the extended model, these brand effects are largely replaced by the ratings of familiarity with the product, knowledge of the organization, knowledge of the management, and company category. Only a significant positive residual remains for JooJoo, and a significant negative residual for Microsoft. The total brand effect in the extended model can be constructed as given in Eq. 6, i.e. as the sum of the marginal effect of each construct multiplied by its mean rating. For example, the total effect of Apple is:

Table 5 Maximum likelihood preference estimates of conjoint models

	Benchmark model	Extended model
Log-Likelihood	-721.0*	-636.5*
R ²	28.9 %	38.1 %
Brand		Brand residual
Apple	1.12* (.07)	-.15 (.14)
Samsung	.20* (.07)	.09 (.12)
JooJoo	-.99* (.09)	.53* (.22)
Microsoft	-.34* (.08)	-.47* (.15)
Storage		Storage
32 GB	-.40* (.08)	-.42* (.08)
64 GB	-.06 (.07)	-.11 (.08)
96 GB	.20* (.07)	.25* (.08)
128 GB	.25* (.07)	.28* (.08)
Price		Price
\$399	.86* (.07)	1.02* (.08)
\$499	.18* (.07)	.15* (.08)
\$599	-.20* (.08)	-.22* (.08)
\$699	-.84* (.09)	-.94* (.10)
		Brand perception
Fam		.50* (.06)
Kno		.26* (.07)
Knm		.15* (.07)
Ccat		-.25* (.10)

* significantly different from 0, $p < .05$
Standard errors in parentheses

$$\begin{aligned}
&-.15 && (\text{brand residual for Apple}) \\
&+.50 \times 3.02 && (\text{effect of Fam}) \\
&+.26 \times 3.07 && (\text{effect of Kno}) \\
&+.15 \times 2.77 && (\text{effect of Knm}) \\
&-.25 \times .13 && (\text{effect of Ccat}) \\
&= 2.54 && (\text{total brand effect})
\end{aligned}$$

The total brand effects of the extended model are compared with those of the benchmark in Table 6. After zero-centering the constructed values, the brand effects are very similar to those of the benchmark model. This means that the extended model is able to decompose the brand effect by incorporating the constructs into the model. This result as well as the fact that the extended model fits the observed data significantly better than model 1 ($\Delta R^2=9.2$ %-points; $p<.001$, likelihood ratio test) justify the use of the constructs as a valid basis for assessing the hypotheses. In this regard, the γ estimates, which are all significant, directly support hypotheses H1 (*Fam*), H2 (*Kno*), H3 (*Knm*), and H4 (*Ccat*).

In addition to testing these hypotheses, our model allows a comparison of their effect magnitude. Hence, familiarity with the product has the highest impact on product choice, followed by knowledge of the organization, company category, and knowledge of the management.

Moderation analysis

In order to test the moderating effect of perceived product importance, we included the associated interaction effects according to Eq. 6. The results show that a higher product importance increases the effect of product familiarity on the overall utility significantly ($\eta_{\text{imp,fam}}=.352$, $p=.004$). The moderating effects of knowledge of the organization ($p=.66$), knowledge of the management ($p=.69$), and company category ($p=.38$) are not significant.

However, adding moderating effects also for the remaining product characteristics, i.e., brand (residual), storage, and price, shows that this significant effect vanishes. In order to explore this result in more details we conducted a median split according to product importance and analyzed the resulting segments separately. The estimation results for these two segments are given in Table 7. The results generally reproduce the insights from the aggregate model. However,

Table 6 Comparison of constructed total brand effects with benchmark model

	Total brand effects model 2	Total brand effects model 2 (zero-centered)	Brand effects model 1
Apple	2.54	1.27	1.12
Samsung	1.51	0.23	.20
JooJoo	0.12	-1.16	-.99
Microsoft	0.92	-0.35	-.34

Table 7 Estimation results for low and high importance segments

	Estimate low importance	Estimate high importance
Log-Likelihood	−332.6	−291.9
R ²	35.1 %	44.0 %
Apple	−.06 (.18)	−.07 (.24)
Samsung	−.05 (.15)	.37 (.21)
JooJoo	.51 (.28)	.36 (.40)
Microsoft	−.39 (.19)	−.66* (.24)
32 GB	−.48* (.12)	−.37* (.12)
64 GB	−.08 (.11)	−.19 (.12)
96 GB	.30* (.11)	.20 (.11)
128 GB	.26* (.11)	.36* (.12)
\$399	1.24* (.11)	.74* (.11)
\$499	.12 (.10)	.23* (.11)
\$599	−.22* (.11)	−.22 (.12)
\$699	−1.14* (.14)	−.75* (.14)
Fam	.43* (.09)	.46* (.09)
Kno	.26* (.09)	.28* (.11)
Knm	.12 (.09)	.21* (.11)
Ccat	−.24 (.13)	−.18 (.20)

* significantly different from 0,
 $p < .05$

Standard errors in parentheses

the preference estimates γ are not significantly different between the two segments ($\alpha=.1$). The major difference between these two segments is the overall brand relevance. Table 8, which reports the attribute relevance measured as the relative range of the preference estimates, shows that the low importance segment reacts in a more price-sensitive fashion, while the high importance segment stays more loyal to the brand. This means that for the low importance segment, the brand of a tablet computer is less relevant, which in turn also diminishes the overall impact of the brand-specific constructs. This is however not the case for the marginal effect of the familiarity with the product, organization, management, and company category. Consequently, we conclude that product importance does not moderate the relationship between the utility and customer knowledge of the (a) product, (b) organization, and (c) management as well as (d) the perceived company category.

Table 8 Attribute relevance of low and high importance segments

	Attribute relevance (low importance)	Attribute relevance (high importance)
Brand	35.6	59.2
Storage	16.4	13.3
Price	47.9	27.5

Discussion

Findings on entrepreneurial branding

The results of our CBC study showed that brand effects can largely be explained via the ratings of familiarity with the product, organization, management, and company category. Thus, in order to overcome uncertainties and to increase purchase probabilities, start-ups should focus on spreading information about the product, followed by giving information about their organization. Further, the more customers perceive the firm as an established venture, the more likely they are to choose the respective firm (an exception might be the so-called “early adopters” whose preferences are often more technically-oriented, or so-called “lead users” which companies include in the product development process; see e.g. Schreier and Prügl 2008).

Established firms spread trustworthy signals so that business transactions with established ventures are perceived as less uncertain than those with start-ups, so entrepreneurs should whenever possible avoid leaking any kind of information about their (young) company category to the public. Finally, effectively presenting the management team of the company also leads to a significant increase in choice probability of the product.

Altogether, innovative start-ups face tremendous challenges. Being a new firm offering new products creates brand challenges that might hinder sales. Interestingly, the CBC analysis revealed a significant positive brand residual for the start-up JooJoo. Although we cannot separate this effect from other influences (e.g. the operating system of the tablet), it could be hypothesized that, whereas perceived customer uncertainty is higher with unknown companies, their newness on the other hand might add to their brand image. After all, ‘new’ is often considered hip, trendy, and innovative. So being new or a start-up can improve the brand perception, and in this regard, it can be attributed to added value for the brand or even as an additional utility which is not (or cannot be) assessed by objective attributes (Park and Srinivasan 1994; Erdem and Swait 1998). This might in the end be a chance and a threat at the same time for new and small companies that do have some kind of “iconic status” with their hip and innovative products, with the probability of being acquired by giant multinational companies, (Austin and Leonard 2008).

At the same time, being familiar with something does not automatically imply positive connotations. People can also be familiar with unsatisfactory products, unreliable organizations and an incapable management team. Also, the level of newness, i.e. the question about which kind of innovation tablet computers represent, is arguable, and thus also its relation to branding. According to Carayannopoulos (2009), the introduction of radical innovations can be supported by a lack of legitimacy of the innovator, whereas an incremental innovation benefits from preexisting structures and markets and therefore from a known and established company record (Henderson and Clark 1990). However, according to Carayannopoulos (2009), tablet computers might be considered *radical innovations* (since they attract new customers with different needs), *architectural innovations* (since they can be considered as a form of desktop/laptop computer that are used to essentially perform the same kinds of tasks), or even only as *incremental*

innovations (since one could perceive tablets simply as larger versions of smart phones which were introduced before the tablets).

Contrary to our assumptions and different from the findings by Shepherd and Zacharakis (2003), product importance does not moderate the link between utility (i.e., choice probability) and familiarity with the product, organization, management, or the company category. However, we find that product importance moderates the relevance of brand and price. Whereas in the low importance sector consumers are much more driven by price than by brand, we find the opposite with consumers who consider the choice to be important. Thus, for the low importance segment the manufacturer of a tablet computer is less relevant, which in turn also diminishes the overall impact of the brand-specific constructs, but not their marginal effect.

From a more practical perspective, developing strong brands focuses on attaching a brand name and/or symbol to a product or service and loading this brand with images and values, either by *integrating* the branded product with the company name and corporate identity (e.g. the “Volkswagen Golf”) or by *differentiating* between the brand and the company (e.g. the shaving brand “Gillette”, where the manufacturer “Procter & Gamble” is hidden from the customer) (see e.g. Urde 1994). The latter example implies that brands can be built without providing information about the organization and its management, which is frequently used for convenience products, where the shopping decision is characterized by low customer involvement (see e.g. Kotler and Keller 2009). It therefore appears to be advisable for start-ups to develop an understanding of how important their customers judge their products. Focusing on brand-building endeavors is particularly advisable in markets with high product importance and high brand relevance (Fischer et al. 2010). Here, signaling trustworthy information about products, the organization, and management is recommended to increase customer knowledge and (corporate) brand familiarity, and to boost brand image and, as a consequence, the long-term reputation of the company as well. Thus, given the information deficit on the consumer’s end, providing them with more insight and, in doing so, increasing their knowledge elevates the likelihood to make the “right” choice. In low importance markets, however, price is the major selling criterion, and if additional information is spread it should be about the product itself. This makes it crucial for the entrepreneur to determine the type of target market before brand-building activities are planned and implemented.

Our findings can also be used to make approximate predictions about the adoption rate of new products; exact predictions would require additional CBC experiments. Our results can in fact serve as guidelines to estimate new product success in the tablet computer market. In this regard, one can conclude that the successful launch of Amazon’s “Kindle Fire” could, at least to some extent, be traced back to customers’ familiarity with the well-established organization selling it (Amazon is currently ranked as the 10th most valuable brand in the world according to WPP and MillwardBrown 2014). Its well-known founder Jeff Bezos was also named “Person of the Year” by *Time* magazine in 1999 and selected by *U.S. News & World Report* as one of “America’s best leaders” in 2008. The role of the founder/entrepreneur in the context of building disruptive brands could thus also represent an interesting, yet underresearched (van Rensburg 2014) future research topic.

Application of choice-based conjoint analysis in entrepreneurship research

Due to the conceptual advantages, CBC represents the status quo in preference measurement, e.g. in marketing applications and in particular in areas such as product development and pricing (Wlömert and Eggers 2014). Choice modeling is also widely used in other domains such as transportation, agriculture, or medicine. It is therefore surprising that CBC (and conjoint analysis in general), which is a suitable technique for modeling organizational decision-making that involves trade-offs, is still an underutilized method in entrepreneurship research (Short et al. 2010). Directly building upon Lohrke et al.'s (2010) explicit recommendation for a greater usage of conjoint analysis in entrepreneurship research because of “the method’s direct applicability to many of the field’s most important research questions” (p. 28), our findings underscore the applicability of CBC measurement in entrepreneurship research. In fact, very recent research is already taking up this topic, modeling e.g. internationalization (Kraus et al. 2014a) or international marketing mix decisions (Kraus et al. 2014b) of entrepreneurial companies.

In our research context, CBC helped to analyze the importance of start-up characteristics from a customer perspective. In this regard, CBC analyzes consumer decisions between competing product offerings, which is very similar to actual purchase decisions and therefore leads to valid results. This is crucial to predicting firm success in entrepreneurship research where firms face high amounts of state uncertainty, and is a less biased approach than asking the entrepreneur him/herself for appropriate marketing tactics.

Limitations

To keep the length of the questionnaire short, we measured familiarity and knowledge on an aggregate level with single-item scales. These single-items may not properly account for the different facets of these constructs. For example, instead of asking for knowledge of the organization in general, a better procedure would be to ask specifically for different aspects of the organization (e.g., location, financial data, etc.). However, this procedure allowed us to model consumer responses directly into the likelihood function (Swait et al. 1993) instead of using models that require a combination of factor analyses and choice models (Ashok et al. 2002; Sonnier and Ainslie 2011).

Moreover, we tested our approach for only one product category (tablet computers). While we differentiate our findings depending on the level of product importance that could be relevant for other categories, an effective generalization nevertheless remains limited. This holds especially in an industry that changes as rapidly as the one examined in this paper. Nevertheless, the methodological approach that we presented can easily be transferred to other categories (or different countries/cultural contexts) in order to test the brand-specific effects.

We are also aware of the fact that we did not apply a representative sample of tablet computer buyers. However, it was not our goal to make representative predictions for the tablet computer market. We instead aimed at finding indicators for brand signals in the context of new and established firms and at showing the applicability of our extended conjoint approach in entrepreneurship research for which our sample is

appropriate. In this regard, we also did not account for the heterogeneity of the sample, e.g., the origin of the respondent. Although the English sample shows a significantly higher preference for the brand Apple ($p < .001$) and a larger effect of familiarity on the overall utility ($p < .001$), this difference is not critical for our analysis, so that we did not detail this effect further.

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