



Effective entrepreneurial marketing on Facebook – A longitudinal study

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ABSTRACT

Social media offers a myriad of opportunities for entrepreneurial marketing strategies that leverage the power of communities, especially when they are combined with traditional approaches such as celebrity endorsement. The reach, frequency, and speed of communication on social media offer the ideal leverage for the drivers of entrepreneurial marketing. However, the rapid rate of change may threaten the effects of investments in entrepreneurial marketing on social media and they might become only short-lived. Employing structural equation modeling, we test the long-term effect of Facebook-based celebrity endorsement on purchase intention among 234 members of a Facebook fan community in a two-wave longitudinal design. We argue that this relationship is mediated by a sponsor's brand image and moderated by brand differentiation. This study is the first to investigate the long-term effects of entrepreneurial marketing on social media. We present the contributions and implications of our findings as they affect research and practice.

1. Introduction

Entrepreneurial marketing is a practice and field of research that has developed rapidly over the last three decades (Hills & Hultman, 2011; Hills, Hultman, & Miles, 2008; Kilenthong, Hultman, & Hills, 2016) It leverages the new logic of social media and has the potential to disruptively innovate consumer communication in the emerging digital economy. Facebook communities where individuals self-select into communities concerned with specific themes, such as entertainment and sports celebrities, offer an attractive marketing option for growing numbers of firms (Hennig-Thurau et al., 2010). Sports celebrity endorsement is one of the oldest marketing strategies for enhancing the image of a brand and heightening purchase intentions and is first recorded as occurring roughly 1800 years ago when Roman politicians sponsored athletes to enhance the army's image and boost recruitment levels (Milner, 2011). The strategy apparently worked well, and offers a very early example of entrepreneurial marketing, in that the politicians pursued their marketing strategy with an entrepreneurial mind set in conditions of scarce resources (Kraus, Harms, & Fink, 2009). Further, the Roman marketing strategy seized opportunities stemming from

emerging trends to deliver great effects at relatively low cost and with limited risk, and that is exactly what entrepreneurship is about (Shane & Venkataraman, 2000).

In the current digital era, logics and mechanisms remain unchanged. Companies now sponsor celebrities via their Facebook communities, and those celebrities endorse products to transfer the positive image of the celebrity to the sponsor's brand and ultimately to heighten purchase intention, which is expected to translate into action (van Gelderen, Kautonen, & Fink, 2015; Kautonen, Gelderen, & Fink, 2015). Recent examples such as Italian bank UniCredit sponsoring the UEFA champions league (Penna & Guenzi, 2014) demonstrate the potential of social-media-based entrepreneurial marketing using celebrity endorsement to generate awareness and enhance brand image and purchase intentions (Lee & Watkins, 2016). For the strategy to be fully effective, the celebrity endorser must have solid credibility among the members of the target group (Dwivedi, Johnson, & McDonald, 2015; Louie & Obermiller, 2002), and the goods or services endorsed must be capable of being differentiated from similar market offers (Hoeffler & Kevin, 2002; Keller, 1993). Under these conditions, celebrity endorsement can boost purchase intention (Pradhan, Duraipandian, & Sethi, 2016);

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however, we do not yet know whether this also holds true in social media settings (Hoffman & Fodor, 2010). Even less is known of the long-term effects of social-media-based strategies on entrepreneurial marketing generally (Dijkmans, Kerkhof, & Beukeboom, 2015; Zauner, Fink, Maresch, & Aschauer, 2012), and specifically whether the effects of social-media-based celebrity-endorser strategies are sustainable over longer periods of time. It is important to address this gap owing to the increasing role of social media-based strategies in entrepreneurial marketing, the escalating academic interest, and the practical relevance of so-called influencers (Agrawal, 2016). While in 2016, over 12% of total marketing budgets was spent on social-media channels, only about a half of firms reported an impact on their performance (Moorman, 2017).

This article addresses the research question of whether there are long-term effects of social-media-based entrepreneurial marketing on purchase intentions. We employ information integration theory (Anderson, 1981) and argue that in sponsored Facebook fan communities the credibility of celebrity endorsers affects the intention to purchase a product (Fazio & Williams, 1986). Further, we argue that this relationship is mediated by brand image (i.e., perceptions of a brand reflected by the brand associations in consumers' memories) (Keller, 1993) and moderated by brand differentiation, that is, the degree to which members of the target community can differentiate the brand from other similar brands.

We use the context of a Facebook-based celebrity endorsement of a world leading beach-volleyball player and his team and the effect on purchase intentions among 234 members of the Facebook community over two waves with a four-year gap between them.

Our findings contribute to research and practice. First, analyzing the effects of entrepreneurial marketing via Facebook adds a contemporary aspect and, thus, informs the discussion even after 30 years of practice. The study thus updates theoretical concepts in marketing by translating influential ideas from information integration theory into the era of social media (Felix, Rauschnabel, & Hinsch, 2017). Second, our results contribute to the research stream at the intersection of entrepreneurship and marketing (Kraus, Filser, Eggers, Hills, & Hultman, 2012). Specifically, analyzing the relationships between celebrity endorser credibility, brand image, and purchase intention from a consumers' point of view contributes to a better understanding of the psychological mechanisms relevant in social-media settings. Third, highlighting the moderating role of brand differentiation informs practitioners about promising areas of application of this specific entrepreneurial marketing strategy and also the threats to its successful implementation.

2. Theoretical framework and hypotheses

2.1. Entrepreneurial marketing in social-media communities

Entrepreneurial marketing is the interface between entrepreneurship and marketing (Becherer, Haynes, & Fletcher, 2006) and denotes the proactive identification and exploitation of opportunities through creative, risk-taking, unplanned, non-linear, and visionary marketing activities (Morris, Schindehutte, & LaForge, 2002) combined with efficient information management (Schulte & Eggers, 2009). Entrepreneurial marketing aims to create customer value and customer equity, to build and renew competitive value (Miles & Darroch, 2006), to seek profitability (Becherer et al., 2006), and to overcome challenges in uncertain economic times (Eggers & Kraus, 2011).

Entrepreneurial marketing can be understood as marketing with an entrepreneurial mindset because it is the organizational function of marketing taking into account innovativeness, risk taking, pro-activeness, and the pursuit of opportunities without regard for the resources currently controlled (Kraus et al., 2009). Accordingly, entrepreneurial marketing requires the marketer to display an underlying entrepreneurial orientation (Eggers, Hansen, & Davis, 2012). Successful entrepreneurial marketing builds customer value “through

relationships, especially by employing innovativeness, creativity, selling, market immersion, networking or flexibility” (Hills, Hultman, Kraus, & Schulte, 2009, p. 6).

One promising strategy in entrepreneurial marketing that builds on relationships and networks is community-based marketing. Community-based marketing as an entrepreneurial marketing approach focuses on the identification, usage, or development of product-related communities to communicate product features (Boyle, 2004) to generate a product or brand image. This entrepreneurial marketing approach uses communities (clubs, internet forums, fan communities) as a source of insights to support entrepreneurial marketing (Bhatli, Eggers, & Gundolf, 2012). The approach leverages the value of self-selected topic-centered or celebrity-centered communities (Schmengler & Kraus, 2010). One key to enhancing customer equity is the participation of customers in social networks (Chae & Ko, 2016). Rather than artificially creating or managing a community, the aim is to connect customers around a product or brand to foster interaction and communication (Roessl, Kraus, Fink, & Harms, 2009) until the members identify with the user-generated community (McAlexander, Schouten, & Koenig, 2002; Muniz & O'Guinn, 2001; Schau, Muñiz, & Arnould, 2009). The users' interaction means they feel entertained (Zagila, 2013), empowered (Labrecque, vor dem Esche, Mathwick, Novak, & Hofacker, 2013), and that they can help co-create brands (Hajli, Shanmugam, Papagiannidis, Zahay, & Richard, 2017). Social interactions on the subject of brands between peers have significant positive effects on brand rankings (Capatina, Micu, Micu, Bouzaabia, & Bouzaabia, 2017), and can trigger powerful electronic word-of-mouth effects (Mishra, Maheswarappa, Maity, & Samu, 2017; Park, Shin, & Ju, 2017); moreover, community-based marketing conducted in an entrepreneurial manner capitalizes on the resources invested by others.

While community sponsors offer the resources to run and develop the Facebook community, it is the members of the community who invest the major share of resources such as time and effort. In celebrity-centered communities, such entrepreneurial marketing strategies also capitalize on the substantial investment made by the athlete, actor, or other celebrity in his or her own career. According to Breuer and Wicker (2010) internationally competitive volleyball players from Germany invest an average of around EUR 300,000 over the course of their careers in services, travel expenses, and covering loss of wages; and that figure is likely to be far higher for the most successful athletes. Community-based marketing strategies can tap these celebrity and fan investments to enhance the image of their brand and boost their sales.

2.2. Short-term effects of endorser credibility on brand image

A celebrity endorser is “any individual who enjoys public recognition and who uses this recognition on behalf of a consumer good by appearing with it in an advertisement” (McCracken, 1989, p. 310). A firm that uses celebrity endorsement hopes that specific characteristics or qualities of a celebrity will be transferred to its products via marketing communications (Erdogan, 1999). This transfer is possible because a brand's image combines cognitive and affective brand beliefs, which together form the consumer's overall impression of the brand (Brodie, Whittome, & Brush, 2009). The brand image is a set of cognitive and emotional perceptions of the brand as reflected by the brand associations held in consumers' memories (Keller, 1993). The properties of the endorser contribute to this overall mixture of cognitions and emotions.

Information integration theory explains the transfer of the characteristics and qualities of celebrity endorsers to a brand image. It does so by illuminating how customers form and modify their attitudes as they receive, interpret, and evaluate stimulus information, and then finally integrate it with their existing set of attitudes to a brand (Anderson, 1981). Today, this transfer process is well illustrated in social-media communities (Habibi, Laroche, & Richard, 2014). Consumers tend to search for information on products online and their

attitudes toward products and brands are increasingly shaped through the use of social media (Gensler, Völckner, Liu-Thompkins, & Wiertz, 2013). In a world where intentions are shaped by observing and relying on attitudes and behavior of relevant others (Ajzen, 1991), perceived brand image depends heavily on how and by whom the brand is presented within the social-media domain, including all the objects and subjects it is linked to: Such context effects are well established in marketing (Lynch, Dipankar, & Anusree, 1991). Accordingly, if a celebrity endorser is linked to a brand on social media, his/her qualities and both symbolic and aspirational associations significantly affect the image of the brand. Accordingly, social-media-based celebrity-endorser strategies have become more popular, especially in the context of professional sports and sponsoring. In 2016, about 40% of sponsors bought social-media rights (mostly on Facebook) directly from their sports athlete or club association instead of advertising through other media (Koch & Frees, 2016).

There are strong indications that social-media strategies have a positive impact on a brand's image in general (Bruhn, Schoenmueller, & Schäfer, 2012) and in a sports context in particular (Walsh, Clavio, Lovell, & Blaszk, 2013). However, if it is to have the intended positive impact, only credible information should be provided (Dwivedi et al., 2015; Eggers, O'Dwyer, Kraus, Vallaster, & Guldenberg, 2013; Habibi et al., 2014; Louie & Obermiller, 2002). The credibility of the celebrity endorser is therefore crucial (Spry, Pappu, & Bettina Cornwell, 2011). Authenticity and emotional attachment positively influence the outcomes of word of mouth and purchase likelihood as consumers follow celebrities on social media (Kowalczyk & Kathrynn, 2016; Kowalczyk, Pounders, & Stowers, 2016). Authenticity and user engagement are instrumental to attract and maintain a fan base in a self-organized Facebook community for professional sport teams (Pronschinske, Groza, & Walker, 2012). Similarly, it is the authentic engagement in the community by celebrity athletes that delivers strategic benefits for the sponsors of fan communities. Accordingly, conveying a credible image of a celebrity athlete is crucial for the success of community-based marketing activities via social media.

Furthermore, celebrities help consumers to shape their needs via the creation of a self-brand connection (Dwivedi et al., 2015). In this dynamic the credibility of the celebrity endorsers seems to be especially relevant in the social-media domain, where information is permanently available (Harris, 2009), and where phenomena such as information overload and fake news are prevalent (Habibi et al., 2014). The above conceptual reasoning leads us to propose H1:

H1. The greater the credibility of the celebrity endorser the more positive will be the brand image of the sponsoring firm among the members of the sponsored Facebook fan community four weeks later.

2.3. Long-term effects of endorser credibility on brand image

Strong empirical evidence points to the positive impact on brand image of the exposure to social-media activity sponsored by a brand (Kim & Ko, 2012; Naylor, Lamberton, & West, 2012; Turri, Smith, & Kemp, 2013). However, to the best of our knowledge, no longitudinal study exists that has analyzed the sustainability of these effects. Dijkmans et al. (2015) build on a dataset collected in two waves to investigate customers' exposure to social-media brand activities and brand reputation but did not consider purchase intention.

The lack of longitudinal studies is a major shortcoming of the literature. First, commonly used cross-sectional research designs fail to test the theoretically-postulated direction of causality. Second, there is a lack of evidence on the long-term effectiveness of social-media-based entrepreneurial marketing. Creating associations with a brand through marketing relying on celebrity endorsers on social media takes time (Yoo, Donthu, & Lee, 2000), and therefore, that strategy will only benefit the marketer if the effects are sustainable over longer periods of time.

Previous research has shown that the effectiveness of a celebrity-endorser strategy is sensitive to its context (Silvera & Austad, 2004), and social media is a highly dynamic context in which information is fluid and ever changing (Hennig-Thurau et al., 2010). The effectiveness of entrepreneurial marketing strategies in such a dynamic context might change over time as well. Nevertheless, social-media activity can trigger long-term effects on the images of brands; for example, online reviews of brands have been shown to have long-term effects on the performance of the firms that market those brands (Berger, Sorensen, & Rasmussen, 2010; Tirunillai & Tellis, 2012). Because the brand image held by members of fan communities changes with cues associated with the brand (Fazio & Williams, 1986; Houston & Fazio, 1989), we suggest a brand employing an endorsement by credible celebrities will benefit beyond the short term. Therefore, we formulate the second hypothesis as follows:

H2. The greater the credibility of the celebrity endorser the more positive will be the brand image of the sponsoring firm among the members of the sponsored Facebook fan community four years later.

2.4. Long-term effects of sponsoring firm's brand image on purchase intentions

Brand communities in social media have great potential to enhance relationship quality and shape customer brand loyalty (Hajli et al., 2017), and embedding a brand image in such a community enables the marketer to establish a two-way relationship with the community's members (Li & Bernoff, 2011). Ideally, that relationship prompts user-generated content that not only reflects the image of a brand within the social-media community (Khim-Yong, Heng, & Lin, 2013), but also has more impact on purchase intention among community members than content provided by marketers (DEI Worldwide, 2008; Schivinski & Dabrowski, 2016). That is a notion supported by the work of Ngan, Prendergast, and Tsang (2011) in the sports endorsement context that reveals a strong relationship between sponsoring a winning sports team and purchase intention among members of the fan community.

Marketers' management of a brand image through engagement in social-media communities positively affects consumer purchase intention and behavior (Kumar, Bhaskaran, Mirchandani, & Shah, 2013). In this respect, the effectiveness of social media relies on its being widely accessible and salient in modern societies. The more salient and accessible cues associated with the brand image are, the stronger will be their influence on consumer attitudes and purchase intentions (Fazio & Williams, 1986; Houston & Fazio, 1989). Celebrity endorsement clearly influences customers' behavioral intentions (Liu & Teo, 2007), and brand image is a central driver of purchase intention in particular (Wang & Yang, 2010), so, marketing in the form of celebrity endorsement on the Facebook fan community of a sports team seems promising. More specifically, the brand image of the sponsoring firm perceived by the members of the Facebook fan community can be expected to positively influence purchase intentions with regard to the sponsor's product and services.

Again, to create value, the effects on purchase intention need to be sustainable over a considerable span of time:

H3. The more positive the image of the sponsoring firm's brand, the stronger will be the purchase intention among the members of the sponsored Facebook fan community four years later.

2.5. Brand differentiation as moderator

Perceived brand differentiation (i.e., the degree to which members of the target community can differentiate the brand from other similar brands) is regarded as key to market success (Dickson & Ginter, 1987; Kotler, 1994; Levitt, 1980). For a customer of a brand perceived to have strong differentiation the brand would be unique and trigger an easily

identified and recalled set of associations (Hoeffler & Kevin, 2002; Keller, 1993). Those associations provide customers with a reason to buy the particular brand instead of other similar brands (Aaker, 2001). The stronger a brand's differentiation, the clearer is the picture, in terms of a mix of cognitions and emotions, consumers hold in their minds (Carpenter, Glazer, & Nakamoto, 1994).

However, more recent empirical evidence questions the general acceptance of the positive role of brand differentiation in the translation of marketing activities into market success (Scriven & Ehrenberg, 2004; Sharp & Dawes, 2001). Skepticism emerged as early as 2007 when Romaniuk, Sharp, and Ehrenberg called for a more fine-grained analysis of the role that brand differentiation plays in the relationship of marketing activities and their effects. Accordingly, we formulate two moderation hypotheses that each captures a distinct effect (Romaniuk & colleagues, 2007).

First, brand differentiation can affect celebrity endorser credibility in connection with brand image. In the case of a highly differentiated brand, consumers have already established strong and stable beliefs and associations about that particular brand (Ries & Trout, 1986), and therefore new informational cues may not alter their set of brand associations (Keller, 1993). Customers with such strong existing brand associations might be more resistant than less ardent fans of the brand to the additional impact of celebrity endorsement used to alter the brand image by transferring associations with the celebrity onto the brand. Accordingly, strong brand differentiation will buffer the positive effect of celebrity endorser credibility on brand image. Accordingly, we propose H4 below:

H4. Brand differentiation moderates the relationship between celebrity endorser credibility and brand image: The stronger the brand differentiation, the weaker the relationship.

Second, a brand being highly differentiated implies it has a strong and stable mix of associations. In such cases, positive brand images rest on strong foundations consisting of strong attitudes toward the brand that boost the formation of purchase intentions (Ajzen, 1991). Such intentions are largely influenced by recollections of prior experiences (Ratnayake, Broderick, & Mitchell, 2010). The stronger the differentiation of the brand, the more effect a positive brand image has on the intention to purchase a product from that brand. Therefore, we propose H5 below:

H5. Brand differentiation moderates the relationship between brand image and purchase intention: The stronger the brand differentiation, the stronger the relationship.

The proposed hypotheses are summarized in the research model shown in Fig. 1.

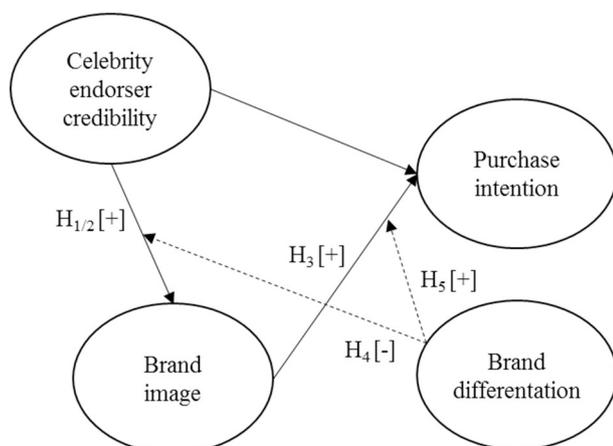


Fig. 1. Research model.

3. Material and methods

3.1. Data collection

The longitudinal study is based on two waves of data collected in Austria in 2010 (Wave 1 at t1) and 2014 (Wave 2 at t2). Data collection was via surveys directed to the members of the Facebook fan community of a world-renowned Austrian beach-volleyball player and his team members. The main sponsor of the team and of the Facebook fan community is the market leader in telecommunication services in Austria. The surveys were distributed online via a link posted in the Facebook fan community following pre-testing on students, which prompted only a few minor changes to the original.

Wave 1 was conducted in summer 2010 (t1). All 2286 members of the Facebook fan community were invited to provide an email address to which the survey would be sent four weeks later. The researchers incentivized participation by offering entry into a raffle to win a volleyball training session with the celebrity athlete. Following one reminder posted to the Facebook community, the research team received 326 complete surveys. After cleaning the sample of multiple entries (identified by identical email addresses), 319 valid responses remained (a response rate of 13.95%).

Wave 2 was conducted in summer 2014 (t2). Again all members of the Facebook fan community were invited to provide their email addresses and were again offered an entry into a second raffle. During the four years, the number of members had grown to 5388. After two weeks and one reminder posting in the Facebook community, the research team received 531 complete surveys. After cleaning the sample of multiple answers (identified by identical email addresses) 512 valid responses remained (response rate 9.5%). The respondents of the two waves were matched using the email addresses provided. This resulted in a dataset of 234 members of the Facebook fan community who provided complete survey responses in both waves.

3.2. Scale measurement and properties

All variables were measured by established scales translated from the English original to German (translation and back translation by a German and an English native speaker) and cautiously adapted for the present research context. Measures for brand image were based on Salinas and Pérez (2009), celebrity endorser credibility on Ohanian (1990), purchase intention on Putrevu and Lord (1994) and brand differentiation on a sub-scale of brand awareness proposed by Chaudhuri and Holbrook (2001). A Likert-type scale anchored with *strongly disagree* (1) and *strongly agree* (7) was used throughout.

We tested the properties of the established scales in our dataset through a two-step approach; the first involved running exploratory factor analysis (EFA) on the initial item set. We employed principal component analysis using a non-orthogonal rotation method to identify factor structure because we assumed correlated constructs would be present. The results of the EFA supported the proposed factor structure (eigenvalues > 1). Two items were deleted due to low factor loadings (< 0.4). In the final solution, all items load on their intended latent variables and all factor loadings score 0.6 or above (no cross-loading scores were higher than 0.4).

Second, we ran confirmatory factor analysis (CFA) to assess the scale properties of the measurement model, and again obtained satisfactory results to establish that the intended factor structure is validated by CFA. Global fit indices are above the suggested thresholds (Marsh, Hau, & Wen, 2004; Sharma, Mukherjee, Kumar, & Dillon, 2005), and all factor loadings are above the 0.5 point, demonstrating a high level of convergent validity in the measurement model (Dunn, Seaker, & Waller, 1994). The composite reliability (CR), average variance extracted (AVE), and Cronbach's alpha scores (CA) suggest a high level of internal consistency (Bagozzi & Yi, 1988). Discriminant validity was checked by comparing the square root of the AVE and the

correlation for each pair of factors (Fornell & Larcker, 1981). Additionally, a set of chi-square difference tests (fixing the covariate to 1) yielded no indication of a lack of discriminant validity. Details of the measurement tests are shown in Appendices A and B.

Common method bias (CMB) might occur if exogenous and endogenous variables are obtained from the same data source (Jayachandran, Sharma, Kaufman, & Raman, 2005). We sought to avoid the potential pitfalls of CMB by following guidance from the literature (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003; Podsakoff, MacKenzie, & Podsakoff, 2012): First, we used a longitudinal study design to measure our focal dependent variable. Purchase intention was measured at two different time points (four weeks after the collection of data on celebrity endorsement, brand image, and brand differentiation to test for the short-term effects of celebrity endorsement via Facebook, and four years after the initial data collection to test for the long-term effects). Second, we applied the Harman one-factor test of the three reflective multi-item constructs (celebrity endorser credibility, brand image and brand differentiation) recommended by Frenzen, Hansen, Krafft, Mantrala, and Schmidt (2010). Factor analysis revealed a three-factor solution accounting for 70% of the total variance. Each indicator loaded on the expected factor. No general factor was found in either the unrotated or rotated factor structure. Third, all structural path coefficients remained significant after adding a single unmeasured latent method factor (Podsakoff et al., 2003). Fourth, we tried to psychologically separate the measures of the latent variables. Our actions include randomization of items, use of established scales, item testing for ambiguity, guaranteeing anonymity, and giving instructions on how to fill out the questionnaire that included stating that there would be no wrong answers as different people have different opinions. Overall, we conclude that our results do not indicate any substantial bias arising from common method variance.

Finally, we tested the assumption of multivariate normality and found the result to be highly significant ($p < .000$). Following the recommendations of Olsson, Foss, Troye, and Howell (2000), we used robust maximum likelihood estimation for all analyses. The Yuan-Bentler T2* test statistic was used for all structural model assessments (Yuan & Bentler, 2000).

4. Results

4.1. Basic model

Covariance-based structural equation modeling (CBSEM) was used for hypothesis testing. CBSEM is used frequently in many scientific disciplines and its robustness and accuracy has been validated (Reinartz, Haenlein, & Henseler, 2009). The software Mplus 8 was used for all analyses (Muthén & Muthén, 1998–2017).

The structural model yields satisfactory and consistent results for both the model comprising the short-term effects only and that incorporating the long-term effects. The results are presented in separate tables to aid readability. Table 1 shows the goodness-of-fit indices for the model comprising the short-term effects alone. The chi-square test is slightly above the .05 threshold. However, the comparative fit index

(0.991) and the Tucker-Lewis index (0.988) are above the recommended level of 0.9. Similarly, the root mean square error of approximation (0.034) and the standardized root mean residual (0.041) are within the suggested ranges (Bagozzi & Yi, 1988). Hence, the data fit the model most satisfactorily.

Most importantly, celebrity endorser credibility has a significant positive effect on brand image, when both were measured at t1, a result that supports H1. Regarding the short-term base effects, we also find celebrity endorser credibility does not show any impact on purchase intention, a finding that foils the idea that celebrity endorser credibility has a short-term effect on purchase intention. However, the analysis reveals brand image exerts a strong effect on purchase intention in the short-term; hence, H3 is supported. Confidence intervals reported in Table 1 support the results of the significance tests.

Our results on the long-term effects are presented in Table 2. In this analysis, the focal dependent variable purchase intention was measured four years after the first survey so as to test the long-term effects of celebrity endorser credibility on Facebook. Again, the goodness-of-fit indices indicate a very good fit for the model (e.g., chi-square test $p = .1529$, CFI = 0.995).

Over the four-year time span, celebrity endorser credibility shows a significant positive effect on brand image; a result that supports H2. Comparing the results from Wave 1, we observed only one difference: Although the impact of brand image on purchase intention is still highly significant and moderately strong, the strength of the effect dropped by .114 over the four years. A subsequent significance test for the difference revealed a p-value of .0238. Hence, the direct effect of brand image and the indirect effect of celebrity endorser credibility became weaker over time. Nevertheless, the positive effect of brand image on purchase intention was sustained over time. Accordingly, the results again support H3. Confidence intervals reported in Table 2 support the results of the significance tests.

4.2. Moderator analysis

A subsequent analysis of the moderating role of brand differentiation reveals interesting results. As stated in H4, brand differentiation has a significant negative effect (-0.468 , $p = .000$) on the relationship between celebrity endorser credibility and brand image. In other words, if brand differentiation increases, the impact of celebrity endorser credibility on brand image becomes less important. Therefore, H4 is supported according to the data collected in the first wave (t1). Significant results were also found when using the second wave data (t2) (-0.265). We found reversed moderating directions when testing H5. The relationship between brand image and purchase intention is positively moderated by brand differentiation (Wave 1:0.290) at the 0.05 level and is stable over time (Wave 2:0.215, $p = .000$). Hence, H5 is supported.

4.3. Control variables

Finally, we used the demographic variables, age and gender, as control variables to test the robustness of our results. The inclusion of

Table 1
Results of the main effects – short-term (four weeks).

Hypothesis	Path	Std. est.	p-Value	LCI 2.5%	UCI 2.5%
H1	Celebrity endorser credibility (t ₁) → Brand image (t ₁)	0.197	.010	0.036	0.357
Base effect	Celebrity endorser credibility (t ₁) → Purchase intention (t ₁)	0.050	.351	−0.069	0.170
Base effect	Brand image (t ₁) → Purchase intention (t ₁)	0.722	.000	0.647	0.797

χ^2 (df 37) = 61.361; $p = .09$; CFI = 0.991; TLI = 0.988; RMSEA = 0.034; SRMR = 0.041

Note: χ^2 = chi-square value; df = degrees of freedom; CFI = comparative fit index; TLI = Tucker-Lewis-index; RMSEA = root mean square error of approximation; SRMR = Standardized root mean residual.

Table 2
Results of the main effects – long-term (four years).

Hypothesis	Path	Std. est.	p-Value	UCI 2.5%	LCI 2.5%
H2	Celebrity endorser credibility (t_1) → Brand image (t_1)	0.208	.011	0.047	0.343
H2	Celebrity endorser credibility (t_1) → Purchase intention (t_2)	−0.042	.530	−0.175	0.090
H3	Brand image (t_1) → Purchase intention (t_2)	0.616	.000	0.521	0.711

χ^2 (df 32) = 40.139; p = .15; CFI = 0.995; TLI = 0.992; RMSEA = 0.033; SRMR = 0.033

Note: χ^2 = chi-square value; df = degrees of freedom; CFI = comparative fit index; TLI = Tucker-Lewis-index; RMSEA = root mean square error of approximation; SRMR = Standardized root mean residual.

these variables confirmed the initial results. All hypotheses remain significant. Furthermore, the standardized and unstandardized parameter estimates change only marginally and non-significantly after their inclusion. Age and gender do not significantly load on any variables.

5. Discussion

5.1. Implications for research and practice

Modern-day entrepreneurial marketing relies on mechanisms almost 2000 years old. The present study shows that just as in the ancient world, investing in credible celebrity endorsers is successful, in so far as brand image, and consecutively purchase intention, can be significantly enhanced. The main difference is that the arena is not the ancient battlefield but today's rising star among communication channels; social media. A key finding is that despite social media's somewhat ephemeral reputation the effectiveness of this strategy is by no means short-lived; quite the opposite, this approach proves to be a long-lasting investment as the impact on purchase intention endures over a considerable period of time; four years in the present case. Being able to influence purchase intention over a period of four years is a very powerful force that makes the celebrity-endorser approach a key item in the entrepreneurial marketer's toolbox, especially given that previous research highlights the potential negative impact of traditional disclosed commercial posts on Facebook (Boerman, Willemsen, & Van Der Aa, 2017).

However, the effects of a credible endorser strategy depend on the perceived level of differentiation applied to the sponsoring company's brand. With highly differentiated brands, the effect of brand image on purchase intention is stronger than with less-differentiated brands. Highly differentiated brands are also less vulnerable to adverse impacts to the credibility of the celebrity endorser. This is good news for already highly differentiated brands, but not for less-differentiated ones, which usually have the added disadvantage of being those new to or less successful in the market, and being the more resource constrained. First, running a celebrity campaign on social media might be more challenging for such firms, and second, for these firms lacking a highly differentiated brand, any threat to the credibility of their selected celebrity endorser can create a severe economic threat. The risk of negative information undermining the credibility of the celebrity endorser (e.g. a sports celebrity blamed for doping) is omnipresent in a social-media context where information is easily accessible for everyone at any time and spreads quickly through word of mouth (Mishra et al., 2017; Park et al., 2017). Generally, entrepreneurial marketing is seen as an attractive approach when resources are scarce (Kraus et al., 2009); however, our results add to earlier empirical findings showing that when it is social-media based, entrepreneurial marketing is not necessarily a productive approach for new firms or those working under resource pressure (Eggers, Hatak, Kraus, & Niemand, 2017; Kraus, Fink, Rössel, & Jensen, 2007).

Firms managing less-differentiated brands must actively manage the celebrity-endorser strategy to do all they can to keep the credibility of the endorser stable and at a high level. There is an alternative that could avoid the liabilities of using the single high-profile endorser: Micro-influencers have specific niche audiences with whom they are deeply connected and have already established trust; moreover, micro-influencers are often accessible to companies with smaller budgets (Wissman, 2018). Such influencers establish strong ties with their followers through sharing their stories, and it follows that if they share stories about a particular brand, their audience will be ready to listen (Wissman, 2018). Such social mentions positively influence brand rankings (Capatina et al., 2017) and motivate followers to participate in customer media initiatives that can enhance customer equity (Chae & Ko, 2016). As our results suggest that less-differentiated brands, in contrast to highly differentiated ones, cannot profit from a stronger impact of brand image on purchase intention over time, the micro-influencer approach could offer advantages in that case.

The asymmetric moderating role of brand differentiation provides novel insights that extend far beyond those derived from the more general approach of the ancient Romans. Whenever a celebrity endorser approach is applied, the central role of the brand and its image must not be neglected. Pursuing a celebrity-endorser strategy via social media at the same time implies having an eye on the strategy run from within the brand management domain. As both brand image and brand differentiation strongly influence the impact of celebrity endorser credibility on purchase intention, decisions on brand management are definitely as important as those on which celebrities to partner with or which social-media platforms to utilize. According to Smith, Fischer, and Yongjian (2012), brand-related user-generated content differs across social-media channels, so diligently evaluating which particular platform to use for the celebrity-endorser strategy is also likely to be very important. Marketing practitioners who have the best understanding of the specific dynamics within platforms and between brand-related phenomena, celebrity endorser credibility, and purchase intentions will have an advantage when it comes to allocating limited marketing budgets.

From an entrepreneurial marketing perspective, analyzing the long-term effects of celebrity endorser credibility and brand image on purchase intention provides further insights in terms of strategies for brand positioning, social-media presence, and marketing activity (Spry et al., 2011). The finding that over time, celebrity endorser credibility has an indirect impact on purchase intention via brand image alone underlines the necessity of focusing on brand image in entrepreneurial marketing initiatives in social-media settings. Investing in a credible celebrity endorser proves a reliable strategy with a long-lasting impact. The longitudinal perspective taken in this study not only advances our understanding of the long-term effects of entrepreneurial marketing, but also lends weight to its results from an applied perspective. The effect of celebrity endorser credibility is highly sustainable, which is good news for the investment of sponsors. However, new or unknown brands, for which brand differentiation is still low, are advised to refrain from pursuing this particular entrepreneurial marketing strategy.

5.2. Limitations and future research

Despite of its contribution, this paper has some limitations that offer promising opportunities for future research. First, this study investigates one brand (the telecommunications industry) and one Facebook fan community (volleyball). Hence, the results might be limited in terms of generalizability to other industries and communities. As our findings suggest the resource base of the sponsoring firm might be a decisive factor in the success of entrepreneurial marketing via social-media channels, further research should tap into variations of firms with few resource constraints and some that are highly resource constrained. Future research comparing different industries, such as, fast-moving consumer goods, apparel, food, or different sports could test whether the longitudinal effects found hold across other areas of commerce. Potential interactions between industries and communities might offer interesting insights as well.

Second, to complement this study's focus on brand image and brand differentiation, future research might address more extensive constructs such as brand equity. Third, experimental studies are needed to better isolate the phenomenon under investigation. Although the current study avoids endogeneity linked to reverse causality by implementing a longitudinal design, there is still the risk of missing key underlying variables. Similarly, qualitative and more detailed insights into the specific activities of the celebrity endorsers could enrich the understanding of the effects found and also illuminate a direct path to mine implications for marketing practice. Fourth, regarding entrepreneurial marketing, the field would benefit from more longitudinal studies testing the causal effects of strategic approaches, as the present study did for celebrity endorsement in community-based entrepreneurial marketing on social media. Fifth, potentially harmful effects of negative events centered around the celebrity endorser should be investigated in an experimental setting. It would be interesting to see whether brand differentiation would again play a moderating role. Sixth, it would add to the understanding of boundary conditions of the effects found if personality characteristics such as a need for uniqueness (Tian,

Bearden, & Hunter, 2001) or a sense of community (Peterson, Speer, & McMillan, 2008) were included as additional moderators in the model.

As social-media marketing in general and entrepreneurial marketing via social media in particular, are quite young phenomena compared to traditional marketing initiatives, future research scrutinizing the longitudinal effects of various entrepreneurial marketing strategies in the context of social media is certainly merited. We hope that our efforts encourage such research.

5.3. Conclusion

The overarching research aim of this paper was to investigate the long-term effect on purchase intentions of social-media-based entrepreneurial marketing drawing on celebrity endorsers. We investigated the mediating effect on brand image, and also the moderation effect of brand differentiation.

The results show that celebrity endorser credibility enhances purchase intention among the members of the sponsored Facebook fan community by enhancing the image of the sponsor's brand. Brand differentiation plays a dual role: It reinforces the effect of celebrity endorser credibility on brand image, but at the same time buffers the effect of brand image on purchase intention. Most importantly, these effects proved sustainable over the four-year observation period.

These findings add to the literature in three ways. First, the analysis of the effects of entrepreneurial marketing via Facebook adds a contemporary aspect to the theoretical concepts on strategic social-media marketing (Felix et al., 2017). Second, the analysis of the relationship between celebrity endorser credibility, brand image, and purchase intention from the customer perspective contributes not only to the research stream at the intersection of entrepreneurship and marketing (Kraus et al., 2012) but also supports the discussions around branding in social media (Capatina et al., 2017). Third, by highlighting the moderating role of brand differentiation, this study can guide practitioners on the circumstances in which this specific entrepreneurial marketing strategy can realize its full potential.

Appendix A. Item list

Construct/measure	FL
Celebrity endorser credibility (Ohanian, 1990); AVE = 0.58, CL = 0.73	
Celebrity XYZ is honest.	0.64
Celebrity XYZ is reliable.	0.87
Brand image (Salinas & Pérez, 2009); AVE = 0.69, CL = 0.90	
The products of brand XYZ have better characteristics than competitors' products.	0.79
The brand XYZ is nice.	0.85
It's a brand that doesn't disappoint its customers.	0.81
It's one of the best brands in the sector.	0.87
Purchase intention t ₁ (Putrevu & Lord, 1994); AVE = 0.85, CL = 0.95	
It is very likely that I will buy brand XYZ.	0.97
I will purchase brand XYZ the next time I need a product/service.	0.96
I will definitely try the products/services offered by brand XYZ.	0.86
Purchase intention t ₂ (Putrevu & Lord, 1994); AVE = 0.86, CL = 0.95	
It is very likely that I will buy brand XYZ.	0.98
I will purchase brand XYZ the next time I need a product/service.	0.95
I will definitely try the products/services offered by brand XYZ.	0.86
Brand differentiation (Yoo et al., 2000); AVE = 0.42, CL = 0.68	
I can recognize brand XYZ among other competing brands.	0.62
Some characteristics of brand XYZ come to my mind quickly.	0.79
I can quickly recall the symbol or logo of brand XYZ.	0.50

Appendix B. Correlation matrix

	CA	CR	AVE	1	2	3	4	5	6	7
Celebrity endorser credibility	0.800	0.73	0.58	0.76						
Brand image	0.873	0.90	0.69	0.250	0.83					
Purchase intention t ₁	0.943	0.95	0.85	0.228	0.730	0.92				
Purchase intention t ₂	0.946	0.95	0.96	0.097	0.604	0.777	0.93			
Brand differentiation	0.896	0.68	0.42	0.321	0.869	0.639	0.510	0.65		
Age	n.a.	n.a.	n.a.	-0.074	0.063	-0.068	-0.092	-0.068	n.a.	
Gender	n.a.	n.a.	n.a.	-0.121	-0.134	-0.160	-0.163	-0.213	0.025	n.a.

Note: CA = Cronbach's alpha; CR = composite reliability; AVE = average variance extracted. Square roots of AVEs are presented on the diagonal in bold. Construct correlations are below the diagonal. Construct correlations corrected for common method bias are above the diagonal. n.a. = not available.

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