EVENT MARKET SEGMENTATION:
A REVIEW UPDATE AND RESEARCH AGENDA

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Segmenting target audiences can deliver increases in audiences attending events. An examination of segmentation research progress in the field is needed to assess the extent that researchers are capitalizing on available opportunities. Following the Tkaczynski and Rundle-Thiele framework, this article reviews 90 segmentation articles published from 2010 onwards to examine attendee profiling practices and to assess research practice change over time. Nine research issues have been proposed, which are subsequently discussed. Findings indicate an increase in geographic reach (e.g., Africa and Europe) and a continued dominant focus on on-site self-administered surveys as the data collection method. Both sample sizes and application of multivariate data analysis techniques have increased, and studies are largely employing the same segmentation bases and variables across the two research reviews. Recommendations for future research such as a need for larger sample sizes to warrant segmentation and a greater focus on external validation of segments are outlined.

Key words: Events; Literature review; Market segmentation

Background

In their recent review of event research, Getz and Page (2016) argued that creating and managing events requires a marketing orientation and commitment to customer service. Echoing earlier research (e.g., Allen, O'Toole, Harris, & McDonnell, 2008; Getz, 2007, 2008), the authors concluded that event organizers [e.g., destination marketing organizations (DMOs), local councils, and/or private companies] employing a demand perspective to event management would benefit from profiling event attendees given the potential that targeted approaches offer to innovate and grow events, at potentially a much lower cost and risk (Getz & Page, 2016).

By employing market segmentation to profile event attendees based on variables such as

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expenditure, age, trip purpose, and usual place of residence, event organizers can attract and satisfy attendees that might visit the destination location where the event was held (Getz, 2008; Tkaczynski & Rundle-Thiele, 2011). Additionally, segmentation of event attendees enables event organizers to estimate and evaluate the spending of event attendees, permitting enhanced understanding of where economic benefits are derived from. By understanding the different groups attending events, event organizers can limit seasonality of demand effects, further assisting development (Getz & Page, 2016). By appealing to multiple target segments, improved leveraging for events can be realized and in turn destinations can be economically developed (Getz, 2007).

Segmentation studies of event attendees are frequent (Getz & Page, 2016). Tkaczynski and Rundle-Thiele (2011) reviewed 120 event segmentation articles that were published from 1992 to 2010 with the aim of developing a reference guide for event segmentation research. Major findings were that event researchers used a combination of demographic, geographic, psychographic, and/or behavioral bases (Kotler, 1980) to profile attendees and they employed various data collection methods and analysis techniques across numerous event contexts.

Although Tkaczynski and Rundle-Thiele's (2011) review provided a valuable overview of a diverse range of approaches that had been used to derive event attendee segments at the time, advancements in analytical approaches and data collection techniques have occurred since. For example, big data now offers the potential to combine different data sources, delivering a rich source of information for segmentation researchers to draw from. Moreover, recent advancements such as online social media (e.g., Facebook, Snapchat) and online marketplace and hospitality services (e.g., Airbnb, Flipkey) may have potentially influenced the purchase decisions and the travel behavior of event attendees. Additionally, further progression in the unique types of events such as culinary festivals (e.g., Getz, Andersson, Vujicic, & Robinson, 2015) and wedding expositions (e.g., Daniels, Lee, & Cohen, 2012; S. Kruger, Saayman, & Ellis, 2014) may impact research design and approaches employed.

Event academics and practitioners have benefited greatly from development in the research field,

particularly in the usage of technology (S. Lee, Boshnakova, & Goldblatt, 2017; Preston, 2012). A variety of software packages available such as SurveyMonkey and Qualtrics have enabled researchers to collect data outside of the confines of a physical event setting. Furthermore, data sources such as search queries, online reviews and transaction data (Liu, Teichert, Rossi, Li, & Hu, 2017; Pan & Yang, 2017) have proliferated, enabling researchers access to larger samples and alternate data forms. Additionally, although traditional segmentation approaches may have employed descriptive statistics in the early to mid-1990s (Tkaczynski & Rundle-Thiele, 2011), continual advancements in statistical packages such as Predictive Analytics Software (PASW) (a Statistical Packages for the Social Sciences update) have facilitated multivariate segmentation analysis techniques. Consequently, greater access to larger sample sizes and data analysis advancements facilitates the validity of multivariate analysis techniques such as factor analysis and cluster analysis (Dolnicar, Grün, & Leisch, 2014), which can be employed in an event context. Application of more sophisticated multivariate data analysis alternatives has led to revisions in sample size recommendations and more (see Dolnicar Grün, & Leisch, 2016, for current best practice guidelines).

To provide informed insight into recent advancements in event segmentation, this article seeks to conduct a comprehensive literature review. Specifically, this article profiles event segmentation studies that have been published following Tkaczynski and Rundle-Thiele (2011) to examine progress in the field. In addition to comparing and contrasting the findings between Tkaczynski and Rundle-Thiele's (2011) study, this research aims to address the following issues:

- In which journals are event attendee segmentation articles published?
- Where are event attendee segmentation carried out?
- Which types of events are researched by event attendee segmentation researchers?
- What data collection method/s have been used to collect information from attendees?
- Which of the four segmentation bases developed by Kotler (1980) are used by researchers to profile attendees?

- What variables were utilized by researchers to classify attendees?
- What data analysis methods were applied to segment attendees?
- Have sample sizes increased over time?
- Do sample sizes vary according to the data analysis techniques employed?

Method

A total of 90 academic event segmentation articles published from between 2010 and 2017 in 17 selected ranked event-focused journals form the basis of this study. Procedures reported in Tkaczynski and Rundle-Thiele (2011) were followed to establish which articles from each of the surveyed journals qualified for inclusion. First, at least one of Kotler's (1980) segmentation bases needed to be used to differentiate event attendees. Therefore, studies were considered that used segmentation bases and/or variables without the word "segmentation." Second, in a similar format to Tkaczynski and Rundle-Thiele's (2011) review, data reported in the articles (year of publication, sample size, data collection method, and analysis) were entered into PASW permitting additional analysis (e.g., descriptive analysis, chi-square analysis) to form the data set to assess segmentation practice. Tables 1–3 present the findings. In Table 1, articles are assembled in alphabetical order to provider clearer understanding to the reader. The event's name (e.g., 2014 Masquerade Festival) has been provided for further clarification and reference for the reader.

To understand how Table 1 has been summarized and presented, the following explanatory notes based on Tkaczynski and Rundle-Thiele (2011) are presented. If the event's name is not provided (e.g., confidentiality reasons), this event was simply listed as unnamed. If secondary data were utilized, a superscript "a" was placed after the sample size.

The column labeled Method deals with the different data collection techniques. These were coded as: self-administered mail survey (A), self-administer on-site survey (this included diaries and recollection methods) (B), personal interview (e.g., in-depth/semistructured) (C), self-administered online survey (D), interviewer administered on-site survey (E), telephone interview (F), and observation (G). If a superscript "b" was listed after the method

(letter) it indicated that the researcher/s employed past literature (e.g., festival motivation) as the basis for the event attendee segmentation research instrument. The Data Analysis column lists 12 different techniques that have been employed. These are coded as: descriptive statistics (I), chi-square test(s) (II), t test(s) (III), factor analysis (IV), analysis of variance (V), cluster analysis (VI), regression (VII), correlation analysis (VIII), discriminant analysis (IX), qualitative analysis techniques (X), post hoc analysis (XI), and other analysis (XII).

Event Management is the dominant avenue for published event attendee segmentation research in both the current (24.4% of studies) and the initial (46.7% of studies) reviews. Despite not being part of the initial review, the *International Journal of Event and Festival Management* has published several event segmentation studies (12.2% total of the most recent review) since its inception in 2010. The *Journal of Convention & Exhibition Tourism* [14.4% (current) up from 2.5% (initial)] and the *Journal of Travel & Tourism Marketing* [10.0% (current) up from 2.0% (initial)] were popular outlets for attendee segmentation research. The remaining 14 journals in the current review contributed to approximately two fifths (39.0%) of segmentation studies summarized.

The highest number of segmentation studies (see Table 2) were conducted in the US [26.7% (current) and 45.5% (initial)]. Event attendee segmentation research in South Africa (17.8%) has increased dramatically since 2010 largely due to prolific research conducted by M. Kruger and associates (e.g., M. Kruger, Saayman, & Ellis, 2011, 2012) across a variety of contexts (e.g.,, sports and culture). Conversely, Australia, while again the third most popular context for event segmentation research, reported slightly fewer studies [11.1% (current review) compared to 13.3% (initial review)]. In total, 28 countries provided the research context, which is a slight increase from the 24 reported in Tkaczynski and Rundle-Thiele's (2011) review. Three studies (Getz & McConnell, 2014; Horng, Su, & So, 2013; Mair, 2010) compared attendees across two countries, a slightly higher increase (2 studies) from the initial review. For both reviews, the event locations (countries) were categorized into six continents (see Table 2). Chi-square analysis identified significant differences based on overall

Table 1
Segmentation Approach Used by Event Researchers

Author (Date)	Event Name	Country	Sample Size	Method	Data Analysis	Demographic	Geographic	Psychographic	Behavioral
Aicher et al. (2015)	Unnamed running event	US	201	D[b]	I, III, IV, V, X	✓	✓	✓	
Akyeamong and Yankholmes (2016)	2014 Masquerade festival	Ghana	241	E	I, II, V	✓	✓	✓	✓
Alexander et al. (2015)	2012 Olympic Games	UK	11,451	D[b]	I, II, IV, V, VI, IX	✓	✓	✓	✓
Báez and Devesa (2014)	2008 Valdivia International Film Festival	Chile	750	B[b]	I, II, IV, V, VI	✓	✓	✓	✓
Barquet, Gabriel, Osti, and Schubert (2011)	2009 Biathlon World Cup	Italy	344	B	I, II, V, VII	✓	✓	✓	✓
Bemthal, Nagel, Harrill, and Riner (2012)	Unnamed ticketed events	US	186	B	I, III, IV, V	✓		✓	✓
Blesic et al. (2013)	2010 Dragacevo Trumpet Festival	Serbia	300	B[b]	I, III, IV, V	✓	✓	✓	
Bojanic and Warnick (2012)	2008 Great New England Air Show	US	1,145	D[b]	I, III, VII, XII	✓		✓	✓
Bosnjak et al. (2016)	Unnamed dance festival & skiing event in 2009	US	213	B[b]	I, IV, V	✓		✓	
Brida et al. (2013)	Three 2008 Christmas Markets	Italy	1,275	B	I, II, III, V, VII	✓	✓	✓	✓
Byrd, Beedle, and Cardenas (2014)	2009 Pilot Mountain Cruise & 2009 Carolina Annual H. O. G. Rally	US	394	B, E[b]	I, II, III	✓	✓		✓
Carlsen, Rosenberger III, and Rahman, (2016)	Unnamed major events	Australia	389	D[b]	I, IV, VII	✓		✓	✓
Case, Dey, Hobbs, Hoolachan, and Wilcox (2010)	5 Xterra events	US	470	D	I, III, V, XII	✓	✓		✓
Cetin and Bilgihan (2016)	Unnamed cultural event	Turkey	21	C[b]	I, X	✓	✓	✓	✓
Chang and Yuan (2011)	2006 Old Town Spring SpringFest	US	129	B[b]	I, III, IV, V	✓	✓	✓	
Chiang, Xu, Kim, Tang and Manthiou (2016)	2013 Harbin International Ice Snow Sculpture Festival	China	420	B[b]	I, IV	✓	✓	✓	✓

Table 1 (Continued)

Author (Date)	Event Name	Country	Sample Size	Method	Data Analysis	Demographic	Geographic	Psychographic	Behavioral
Croes and Lee (2015)	2010 Curacao North Sea Jazz Festival	Caribbean	216	B[b]	I, III, VII, VIII	✓	✓	✓	✓
Daniels et al. (2012)	2007–2009 bridal showcases	US	379	D[b]	I, IV, V	✓	✓	✓	✓
Filo, Chen, King, and Funk (2013)	Unnamed international marathon event	US	1,029	D[b]	I, IV, V, VIII	✓	✓	✓	✓
Fonseca and Ramos (2014)	Unnamed music festivals	Portugal	657	B, D[b]	VI	✓	✓	✓	✓
Gallarza, Artegaga, and Gil-Saura (2013)	5th World Meeting of Families	Spain	711	D[b]	I, VIII, XII	✓	✓	✓	✓
Getz et al. (2015)	Unnamed food events	Europe	3,137	D	I, II, V, VI, VIII	✓		✓	✓
Getz and McConnell (2014)	Transrockies Challenge & GORE-TEX Tran	US & Canada	183	D[b]	I, II, III	✓		✓	✓
Hallman and Wicker (2012)	3 Marathons in 2009/10	Germany	1,370	D[b]	I, II, III, IV, VI, VII, VIII	✓		✓	✓
Herrero et al. (2011)	2007 Santiago de Compostela Contemplative Music Festival	Spain	738	B	I, XII	✓	✓	✓	✓
Horng et al. (2013)	2008 Eight Macau Food Festival & 2008 Taiwan Culinary Exhibition	Taiwan & China	489	B[b]	I, IV, VI, IX	✓		✓	✓
Hyde and Harman (2011)	Gallipoli Battlefield Memorial (Anzac Day)	Turkey	400	E[b]	I, III, IV, V	✓	✓	✓	
Kaplanidou and Gibson (2012)	Unnamed 2008 Youth Soccer event	US	470	B[b]	I, XII	✓		✓	✓
Karvonen and Komppula (2013)	2010 Saulkava Rowing Race event	Finland	538	B[b]	I, II, IV, VI	✓		✓	
K. Kim et al. (2012)	2010 Shanghai Expo	China	336	B[b]	I, III, IV, V	✓	✓	✓	✓
K. Kim and Tucker (2016)	Various unnamed shows	US	13,428	D	I, II, IV, V, VI, IX	✓	✓	✓	✓
King et al. (2015)	2009 Unnamed marathon	US	234	D[b]	I, IV	✓		✓	✓
Ko et al. (2010)	2007 US Open Taekwondo Championship	US	158	B[b]	I, V, XII	✓	✓	✓	✓
M. Kruger, Saayman, and Ellis (2010)	2008 Aardklop National Arts Festival	South Africa	495	B	I, IV, VII	✓	✓	✓	✓

(continued)

Table 1 (Continued)

Author (Date)	Event Name	Country	Sample Size	Method	Data Analysis	Demographic	Geographic	Psychographic	Behavioral
M. Kruger et al. (2011)	2008 Aardklop National Arts Festival	South Africa	495	B	I, III	✓	✓	✓	✓
M. Kruger et al. (2012)	2011 Two Oceans Marathon	South Africa	714	B[b]	I, IV, VII, VIII	✓	✓	✓	✓
S. Kruger et al. (2014)	2012 Unnamed wedding expo	South Africa	375	B[b]	I, II, III, IV, V	✓		✓	
M. Kruger et al. (2016)	2014 Cape Town Cycle Tour	South Africa	297	B[b]	I, II, IV, V, VI	✓	✓	✓	✓
M. Kruger and Saayman (2013)	2009 & 2010 Cape Town International Jazz Festival	South Africa	852	B[b]	I, IV, V	✓	✓	✓	✓
M. Kruger and Saayman (2012a)	4 Roxette concerts in 2011	South Africa	960	B[b]	I, II, III, IV, VI	✓	✓	✓	✓
M. Kruger and Saayman (2012b)	3 Live music events in 2011: The Script, Coldplay, & Kings of Leon	South Africa	2,538	B[b]	I, II, IV, V	✓	✓	✓	✓
M. Kruger and Saayman (2012c)	2010 Innibos Arts Festival	South Africa	438	B[b]	I, II, IV, V	✓	✓	✓	✓
M. Kruger and Saayman (2015a)	2011 U2 Concert	South Africa	585	B[b]	I, II, IV	✓	✓	✓	✓
M. Kruger and Saayman (2015b)	8 music concerts	South Africa	3,665	B[b]	I, II, IV, V, VI	✓	✓	✓	✓
M. Kruger and Saayman (2016a)	2015 H20 festival	South Africa	263	B[b]	I, IV, V, VI	✓	✓	✓	✓
M. Kruger and Saayman (2016b)	Unnamed religious event	South Africa	802	B[b]	I, II, IV, V, VI	✓	✓	✓	✓
M. Kruger and Saayman (2017)	Unnamed 2016 International Jazz Festival	South Africa	311	B[b]	I, IV, V, VI	✓	✓	✓	✓
Lamont and Jenkins (2013)	2010 Audux Alpine Classic	Australia	623	D[b]	I, II, III, V, VI	✓		✓	✓
M. J. Lee, Yeung, and Dewald (2010)	Unnamed 5 exhibitions	Hong Kong	302	B[b]	I, III, IV	✓	✓	✓	✓
I. S. Lee, Lee, and Arcodia (2014)	3 Multicultural festivals in 2010	South Korea	420	B[b]	I, VII	✓		✓	✓
J. Lee and Kyle (2014)	3 community festivals	US	228	A, D[b]	I, II, III, IV, V, VI	✓	✓	✓	✓
C. Lee and Won (2012)	Unnamed baseball games	US	370	D[b]	I, II, IV, V, VI	✓		✓	✓

(*continued*)

Table 1 (Continued)

Author (Date)	Event Name	Country	Sample Size	Method	Data Analysis	Demographic	Geographic	Psychographic	Behavioral
Lim and Bendle (2012)	7 performing arts productions (in 2009)	South Korea	2,279	B	I, IV, V, VII, XII	✓	✓	✓	✓
Lyu and Lee (2013)	2007 SK Telecom Open	Korea	211	B[b]	I, II, IV, V, IX, XII	✓	✓	✓	✓
Mackellar (2014)	2011 Bleach Festival	Australia	380	E	I	✓		✓	✓
Mahadevan (2014)	2012 State Rally	Australia	90	D	I, XII	✓		✓	✓
Mair (2010)	Unnamed conferences	Australia, UK	500	D[b]	I, II, III, IV, V, VI	✓	✓	✓	
Matejevic, Wallrabenstein, and Ristic (2015)	Unnamed canine events	Europe	252	D	I, III, IV, V	✓	✓	✓	✓
McDowall (2010)	10th Month Merit-Making Festival	Thailand	323	E[b]	I, III, IV, VII, VIII	✓	✓	✓	✓
Mikulić, Paunović, and Prebežac (2012)	2010 Dalmaija Wine Expo	Croatia	273	B[b]	I, XII	✓	✓	✓	
Oakes (2010)	Cheltenham International Jazz Festival	UK	244	B	I, II, III	✓		✓	✓
Okubo, Gardebroek, and Heijman (2014)	2008 Kuruma-ichi & Suisha-matusri	Japan	204	B	I, II, XII	✓	✓	✓	✓
K. Park (2016)	2009 Sturgis Motorcycle Rally	US	769[a]	F	I, II, III, VII	✓		✓	✓
E. Park and Boo (2010)	2008 American Red Cross Convention & 2008 Medical Services Today	US	128	D[b]	I, VII, VIII	✓		✓	✓
Pechlaner et al. (2013)	2008 Manifesta 7	Italy	1,394	B[b]	I, VII, VIII, XII	✓	✓	✓	✓
Peter and Anandkumar (2014)	2013 Dubai Shopping Festival	UAE	604	B[b]	I, IV, V	✓	✓	✓	
Peter and Anandkumar (2016)	2013 Dubai Shopping Festival	UAE	603	B[b]	I, IV, VI, VIII, IX	✓	✓	✓	✓
Peters and Schnitzer (2015)	2012 Youth Olympic Games	Austria	89	C	I, X		✓	✓	✓
Pilcher and Eade (2016)	2014 Purbeck Folk Festival	UK	99	C	I, X	✓	✓	✓	
Poisson and Chen (2010)	6 wine festivals in 2008	US	385	B[b]	I, VI, VII, VIII, XII	✓		✓	✓

(*continued*)

Table 1 (Continued)

Author (Date)	Event Name	Country	Sample Size	Method	Data Analysis	Demographic	Geographic	Psychographic	Behavioral
Rittichainuwat and Mair (2012)	5 exhibitions in 2009	Thailand	1,136	B[b]	I, IV, V, VI	✓		✓	✓
Rivera, Semrad, and Croes (2016)	Curacao North Sea Jazz Festival (2010–2014)	Caribbean	1,940	B	I, XII	✓	✓	✓	✓
Robinson and Clifford (2012)	2007 Medieval Festival	Australia	588	B[b]	I, II, IV, V, VII, XII	✓		✓	✓
Saayman and Saayman (2012)	2011 Comrades Marathon	South Africa	389	B[b]	I, VII	✓	✓	✓	✓
Saayman, Saayman, and Joubert (2012)	2010 Wacky Wine Festival	South Africa	400	B[b]	I, II, III, IV, VI	✓	✓	✓	✓
Savinovic et al. (2012)	2009 Festa-Croatian and Fine Festival	Australia	183	E[b]	I, IV, VII	✓		✓	✓
Shen (2014)	2012 Nanjing Qinhuai Lantern Festival	China	393	B[b]	I, IV	✓	✓	✓	✓
Son and Lee (2011)	11th Nonsan Strawberry Festival	South Korea	206	B[b]	I, IV, VII	✓		✓	✓
Szmigin, Bengry-Howell, Morey, Griffin, and Riley (2017)	2007–2010 Reading Festival & The Big Chill	UK	84	C, G	I, X	✓		✓	
Tanford, Montgomery, and Nelson (2012a)	2011 Catersource Convention	US	183	B[b]	I, III, IV, VII, XII	✓		✓	✓
Tanford, Montgomery, and Hetzman (2012b)	2011 UNLVivo Wine Tasting Event	US	211	B[b]	I, III, IV, V	✓	✓	✓	✓
Tkaczynski (2013)	2011 & 2012 Toowoomba Carnival of Flowers	Australia	511	B	I, II, VIII	✓	✓	✓	✓
Tkaczynski and Rundle-Thiele (2013)	2011 Easterfest	Australia	1,702	B, D	II, III, VI	✓	✓	✓	✓
Tzetsiz et al. (2014)	Unnamed beach volleyball tournament	Greece	212	B[b]	I, IV, VII	✓	✓	✓	✓
Wang and Cole (2016)	8 different events	US	536	B[b]	I, II, V	✓	✓	✓	✓
Warnick et al. (2011)	2008 Great New England Air Show	US	1,109	D	I, II, V, VI	✓	✓	✓	✓
Warnick et al. (2017)	2013 Big E Regional Fair	US	3,253	D	I, XII	✓	✓	✓	✓

Table 1 (Continued)

Author (Date)	Event Name	Country	Sample Size	Method	Data Analysis	Demographic	Geographic	Psychographic	Behavioral
Wicker and Hallman (2013)	Unnamed marathon events	Europe	285	D	I, IV, VII	✓		✓	✓
Yeh et al. (2016)	2012 Sun Lake Swimming Carnival	Taiwan	464	B[b]	IV, VI	✓		✓	✓
Yolal, Rus, Cosma, and Gursoy (2015)	2013 Transylvania Internal Film Festival	Romania	180	B[b]	I, III, IV, V	✓		✓	

Note. [a]Indicates the researcher(s) employed past literature. A, self-administered mail survey; B, self-administer on-site survey (this included diaries and recollection methods); C, personal interview (e.g., in-depth/semistructured); D, self-administered online survey; E, interviewer administered on-site survey; F, telephone interview; G, observation. I, descriptive statistics; II, chi-square test(s); III, t test(s); IV, factor analysis; V, analysis of variance; VI, cluster analysis; VII, regression; VIII, correlation analysis; IX, discriminant analysis; X, qualitative analysis techniques; XI, post hoc analysis; XII, other analysis. [b]Secondary data.

location ($p = 0.00$). No changes in the amount of studies reported across three continents namely, Asia ($p = 0.960$), Australasia ($p = 0.073$), and South America ($p = 0.737$) were observed.

In employing Getz and Page's (2016) event type categorization, it was noted (see Table 2) that in both reviews, cultural festivals (e.g., multicultural, music) dominated segmentation research. Sports events (e.g., marathons, Olympic Games) represented approximately a quarter of event segmentation studies in both reviews. Conversely, business events (e.g., conferences, exhibitions) were conducted in a minority of studies. In both reviews there were a few studies (e.g., Bosnjak, Brown, Lin, Yu, & Sirgy, 2016; Nicholson & Pearce, 2000) that were conducted at multiple event types (e.g., sport and cultural). Chi-square analysis identified no significant differences among event types (e.g., $p = 0.092$ for culture, $p = 0.419$ for sport) based on the two reviews.

On-site self-administered surveys remained the most frequently applied method [63.3% (current) up from 45.8% (initial)], with an increase in use observed when compared to the previous review ($p = 0.017$) (see Table 2). Not surprisingly, online (e.g., web surveys), which were largely not available until the last decade, have increased dramatically (27.8% up from 1.1%, $p = 0.000$). The increased use in online surveys is expected given technology advances that are supportive of online data collection (e.g., Pan & Yang, 2017). Both mail (1.1% down from 25.8% of studies, $p = 0.000$) and interviewer-administered (6.7% down from 31.7% of studies, $p = 0.000$) surveys have decreased in use. A combined approach (5.6%) was rarely reported in the current review, indicating a change in favored survey data collection methods.

In comparing reviews, it was concluded that the most popular segmentation approach employed was all four of Kotler's (1980) bases [46.7% (current), 52.2% (initial) $p = 0.425$] (see Table 2). Three bases [42.5% (current), 41.1% (initial)] were also prevalent ($p = 0.840$). Two bases [6.7% (current) and 8.3% (initial)] were infrequently employed ($p = 0.652$) and one base was not used in any of the 90 segmentation studies, whereas a small number (2.5%) considered only one base (psychographics or behavioral) in the initial review.

Table 2

Chi-Square Analysis (One Sample)

	Initial	Current
Location**		
North America*	47.5%	28.9%
Asia	19.2%	18.9%
Australasia	17.5%	8.9%
Europe*	10.0%	22.2%
Africa*	4.2%	18.9%
South America	1.7%	1.1%
Event type		
Cultural	70.8%	61.1%
Sport	26.7%	28.9%
Business	5.8%	12.2%
Unnamed	0.8%	2.2%
Multiple (e.g., cultural and sport)	5.8%	4.4%
Data collection method		
Mail survey**	25.8%	1.1%
Self-administered on-site survey*	45.8%	63.3%
Personal interview	10.8%	4.4%
Online survey**	2.5%	27.8%
Interviewer-administered on-site survey**	31.7%	6.7%
Telephone interview	4.2%	1.1%
Observation	2.5%	1.1%
Segmentation bases		
All four bases	46.7%	52.2%
Three bases	42.5%	41.1%
Two bases	8.3%	6.7%
One base	2.5%	0.0%
Segmentation variables		
Demographic		
Gender**	71.7%	91.1%
Age	83.3%	92.2%
Education	50.8%	62.2%
Income	50.8%	57.8%
Marital status	22.5%	31.1%
Employment/occupation*	27.5%	42.2%
Travel party composition	32.5%	21.1%
Group size	26.7%	30.0%
Ethnicity	10.8%	12.2%
Geographic		
Origin	57.5%	64.4%
Psychographic		
Motivations	41.7%	53.3%
Trip purpose	35.0%	25.6%
Perceptions	23.3%	31.1%
Involvement	15.8%	13.3%
Satisfaction	16.7%	27.8%
Behavioral		
Past experience	39.2%	40.0%
Expenditure	34.2%	42.2%
Length of stay	31.7%	43.3%
Frequency	25.0%	25.6%
Information sources	21.7%	27.8%
Repurchase intentions	20.8%	27.8%
Tourism activities	14.2%	17.8%
Accommodation*	10.8%	24.4%
Transport mode	8.3%	8.9%

(*continued*)

Table 2 (Continued)

	Initial	Current
Sample size		
<200	11.7%	14.4%
200–399	27.5%	35.6%
400–599	25.8%	18.9%
600–799	5.8%	10.0%
800–999	8.3%	3.3%
1000+	16.7%	17.8%
Data analysis method		
Descriptive statistics	94.2%	96.7%
Chi-square	23.3%	33.3%
t Test	25.0%	32.2%
Analysis of variance*	31.7%	45.6%
Factor analysis*	38.3%	56.7%
Cluster analysis*	11.7%	27.8%
Regression	20.8%	24.4%
Correlation analysis	7.5%	6.7%
Discriminant analysis	5.0%	6.7%
Qualitative analysis	5.0%	5.6%
Post hoc**	4.2%	25.6%
Other	8.3%	16.7%

Note. The data analysis methods will be greater than 100% in some instances due to a combined approach employed by event segmentation researchers. $*p < 0.05$, $**p < 0.001$.

The variables employed by event researchers exhibited similarities over time (see Table 2). The demographic variables *age* (92.2%), *gender* (91.1%), *education* (62.2%), and *income* (57.8%) and the geographic item *origin* (64.4%) in this review were once again the most frequently employed variables. Similarly, the three most applied behavioral items of *length of stay* (43.3%), *expenditure* (42.2%), *past experience* (40.0%), and the psychographic base of *motivations* (53.3%) were frequently used. Only three of the 24 items produced significantly different findings between the two reviews, with *gender* ($p = 0.000$), *employment* ($p = 0.026$), and *accommodation* ($p = 0.009$) more frequently employed in 2017 when compared to 2010.

Interestingly, when an online survey method was chosen, approximately a third (36.0%) of studies chose all four bases, with geographic segmentation not considered in these instances (e.g., King, Chan, & Funk, 2015; Lamont & Jenkins, 2013). It should be noted that M. Kruger and Saayman (2015b; 2017) employed *language* ($p = 0.00$) and *number of people paid for* ($p = 0.00$) consistently (over a dozen times) in this review, variables that were not frequently employed by other researchers in this or the earlier review. This focus on language could

largely be due to the uniqueness of the dual language of Afrikaans and English exhibited by South African event attendees in their usual lifestyle. Conversely, the focus on the number of people paid for has been a variable focused upon by M. Kruger and Saayman, but not other event attendee segmentation researchers, which rather tend to focus on economic models (Herrero, Sanz, & Devesa, 2011; Warnick, Bojanic, & Cariter, 2017) as a basis for profiling attendees.

The usage of past literature in the formation of the event attendee segmentation research instrument produced significant differences ($p = 0.00$) between the two reviews. The current review employed past literature (72.2%) as the basis for research much more frequently than studies conducted prior to 2010 (64.8%). Within the initial review it was also noted that secondary data (e.g., K. Kim, Sun, Jogaratham, & Oh, 2007; LeBlanc, 2003) or event industry practitioner-focused studies (e.g., Slack, Rowley, & Coles, 2008; Taks, Chalip, Green, Kesenne, & Martyn, 2009), which were used by fewer than three times each in the current review. However, the focus on festival motivational literature (e.g., Formica & Uysal, 1996; Scott, 1996) was statistically insignificant between both reviews ($p = 0.052$). The current (65.5%) and initial (61.8%) emphasizing motivation across all event types as a relevant segmentation item across different contexts.

Descriptive statistics such as frequencies and means were the most popular method [96.7% (current), 94.2% (initial), $p = 0.400$] for both reviews. However, unlike Tkaczynski and Rundle-Thiele's (2011) earlier research that identified a high number of studies (15.8%) employing descriptive statistics as the sole analysis method, only one study in the current review (Mackellar, 2014) exhibited this trait. Potentially due to the usage of data analysis techniques in PASW, the number of segmentation studies employing *factor analysis* [56.7% (current), 38.3% (initial), $p = 0.008$], *analysis of variance* [45.6% (current), 31.7% (initial), $p = 0.040$], and *cluster analysis* [27.8% (current), 11.7% (initial), $p = 0.004$] have risen in the past 7 years. These three data analysis methods were all employed in the same study to derive segment profiles on twelve occasions (e.g., Alexander, Kim, & Kim, 2015; Báez & Devesa, 2014).

A *t* test was used to compare sample sizes between the two reviews. Although the sample size ($n = 888.08$) is larger for the current review than the initial review ($n = 683.90$), it was not statistically significant ($p = 0.340$). Chi-square tests (see Table 2) indicated that the number or types of bases applied and second, the same size employed, was statistically insignificant. Taken together, these tests indicate that no changes in segmentation practice are evident in the past 5 to 7 years, which is surprising given the growth in big data.

Analysis of variance (ANOVA) was employed to first identify if there was a significant relationship between year of publication and sample size and second whether sample sizes varied according to the data analysis technique used by event segmentation researchers. No significant relationship was found ($p = 0.620$) between year of publication and sample size, indicating that sample size has not increased in more recent years despite the facilitation of data collection techniques (e.g., online methods). Conversely, as outlined in Table 3, significant differences were found between both *cluster analysis* ($p = 0.010$) and *regression* ($p = 0.000$) and sample size. It was concluded that of the 25 segmentation studies in the current review that employed cluster analysis, four (Alexander et al., 2015; Getz et al., 2015; K. Kim & Tucker, 2016; M. Kruger & Saayman, 2015b) employed sample sizes in excess of 3,000, whereas eight (e.g., C. Lee & Won, 2012; J. Lee & Kyle, 2014; Yeh, Hua, & Huang, 2016) had sample sizes smaller than 500. Similarly, five (e.g., Brida, Disegna, & Osti, 2013; Lim & Bendle, 2012; Pechlaner, Dal Bo, & Pichler, 2013) regression studies had a large sample size ($n > 1,000$) whereas seven studies (e.g., Croes & Lee, 2015; Savinoic, Kim, & Long, 2012; Tzetzis, Alexandris, & Kapsampeli, 2014) had a small sample size ($n < 250$).

When combining all 210 studies from the two reviews, it was again concluded that no significant relationship was found ($p = 0.922$) between year of publication and sample size when multivariate cluster techniques were applied, suggesting there has been no change in sample sizes obtained despite guidelines for market segmentation samples increasing over time (Dolnicar et al., 2014). Furthermore, significance differences were only found between *cluster analysis* ($p = 0.002$) and *regression* ($p = 0.001$).

Table 3

Sample Sizes

Data Analysis Technique	Average Sample Size Analyzed (Pre-2010)	Average Sample Size Analyzed (Post-2010)	Average Sample Size Analyzed (All)
Descriptive statistics	682.6	886.3	772.1
Chi-square	652.6	119.5	940.4
t Test	492.1*	388.6	490.3
Analysis of variance	460.6*	1064.0	799.5
Factor analysis	444.4*	1287.7	841.6
Cluster analysis	808.8	1708.5*	1357.4*
Regression	806.4	4548.5*	1530.7*
Correlation analysis	439.0	1067.8	690.5
Discriminant analysis	400.4	98.8	249.6
Qualitative analysis	617.5	622.4	621.6
Post hoc	474.2	678.9	642.4
Other	548.9	941.5	775.4

*$p < 0.05$.

Discussion

Event market segmentation continues to remain a dominant area of research enquiry across cultural (e.g., festivals), sports (e.g., World Cups), and business (e.g., conferences) events. Utilizing Tkaczynski and Rundle-Thiele's (2011) previous framework as the basis for a comparison between the initial and current review, the answers to the nine research issues that were asked in the introduction are now discussed in turn.

In Which Journals Are Event Attendee Segmentation Articles Published?

Event attendee segmentation research continues to be largely published in *Event Management*. Despite this journal's dominance, a relatively new journal, *International Journal of Event and Festival Management*, and the established tourism marketing journal, *Journal of Travel & Tourism Marketing*, are now providing additional avenues for event attendee segmentation research. Consequently, researchers should consider viewing not only *Event Management*, but a view variety of available journals when seeking to further develop theory and understand current research practices in event segmentation.

Where Is Event Attendee Segmentation Carried Out?

The US is the most popular country for event segmentation research across both research reviews. However, since 2010, numerous segmentation studies have been conducted in South Africa and various locations in Europe (e.g., the UK, Germany). Therefore, this suggests that event attendee segmentation research, while occurring across the globe, remains dominated by the US, which may limit understanding. Although this recent review has provided insight into the profile of event attendees, research into cultural events (e.g., M. Kruger & Saayman, 2015b; M. Kruger et al., 2011) are limited to one country (South Africa). Cross-country comparisons, although present (e.g., Horng et al., 2013; Mair, 2010), are minimal and do not focus on examining cultural differences that may be limiting understanding about whether it is appropriate to derive segments across countries. Although selected studies examine attendee ethnicity (e.g., Báez & Devesa, 2014; Ko, Kim, Kim, Lee, & Cattani, 2010) and language differences (e.g., M. Kruger, Myburgh, & Saayman, 2016; M. Kruger & Saayman, 2013), further research into segmenting event attendees to extend understanding of inclusion of the impact of cultural factors in segmentation research is recommended (Getz & Page, 2016).

Which Types of Events Are Researched by Event Attendee Segmentation Researchers?

Cultural events have dominated event attendee research since the 1990s. For example, research at music festivals led both the initial (e.g., Bowen &

Daniels, 2005; Formica & Uysal, 1998) and current (e.g., Blesic, Pivac, Stamenkovic, & Besermenji, 2013; Oakes, 2010) reviews. Likewise, culinary festivals were a popular context for event attendee segmentation across both reviews (Getz et al., 2015; K.-S. Park, Reisinger, & Kang, 2008). The diversity of sports is also prevalent in event attendee segmentation research, with running (Agrusa, Lema, Kim, & Botto, 2009; Aicher, Karadakis, & Eddosary, 2015) and mega-sport events (Peters & Schnitzer, 2015; Qi, Gibson, & Zhang, 2009) prevalent since the initial review. Although special events such as wedding expositions (e.g., Daniels et al., 2012; S. Kruger et al., 2014) represent a relatively new form of events, event attendee segmentation into this field is relatively sparse, which provides opportunities for future research.

What Data Collection Method(s) Have Been Used to Collect Information From Attendees?

Online surveys are beneficial, permitting data to be gathered in sports events (King et al., 2015; Lamont & Jenkins, 2013) or for those who travel to locations not usually open to the public such as airbases (Bojanic & Warnick, 2012; Warnick, Bojanic, Mathur, & Ninan, 2011). It is interesting to observe that researchers continue to employ self-administered on-site surveys as the predominant method of data collection. On-site administration, which may be more expensive (Jennings, 2010), may assist to increase representativeness, generalizability, and limit skewness towards one particular cohort (e.g., females) and should be used as a basis for continual event attendee segmentation, despite its time and financial constraints.

Which of the Four Segmentation Bases Developed by Kotler (1980) Are Used by Researchers to Profile Attendees?

Few changes in the number or types of bases applied and the measures applied over time were noted in this study. A lack of innovation in measures and/or bases may be limiting understanding of the most effective and efficient means to segment and target event attendees. For example, in a tourist context, situation was proposed (Tkaczynski, Rundle-Thiele, & Prebensen, 2015) as a potential

base, which may be applied to extend destination visitation in low tourist seasons.

The geographic base is the least frequently used base in segmentation research. Inclusion of a geographic item in an on-site survey (e.g., S.-B. Kim, Ao, Lee, & Pan, 2012; Tkaczynski & Rundle-Thiele, 2013) may provide greater insight into where event attendees usually reside, which can inform event marketing planning. Specifically, inclusion of geographic measures offers diagnostic information to inform targeting and communication efforts (Moscardo, Pearce, & Morrison, 2001). Economic impact measurement techniques incorporating various data collection methods are being produced (e.g., Warnick et al., 2017). Future research in event segmentation can calculate impact by segments identified to compare and contrast the contributions each segment delivers. This understanding informs resource allocation, ensuring that data drives decision making and that monies are invested to maximize return for the destination thereby benefitting local communities who depend on flow-on effects delivered by events.

What Variables Were Utilized by Researchers to Classify Attendees?

Multiple bases (and variables) to segmentation have been and should continue to be applied by researchers when profiling attendees. The combination of at least three of Kotler's (1980) segmentation bases have been regularly employed by event segmentation researchers across three decades of research. Furthermore, within this review, gender and age were again identified as the most dominant event segmentation items used in event segmentation research (Tkaczynski & Rundle-Thiele, 2011). Despite their popularity, their usage as segmentation variables must be used cautiously given research that has found that both age and gender are insignificant variables in differentiating segments (Hallman & Wicker, 2012; M. Kruger et al., 2016). Therefore, although not the most frequently applied segmentation variable in both reviews, festival motivation has and should continue to be a relevant focus on event attendee research. Armed with this knowledge, event attendee segmentation researchers can identify whether motivational factors such as socialization and enjoyment identified as relevant

in seminal research across different contexts (e.g., Formica & Uysal, 1996; Scott, 1996) continue to be relevant in current event attendee research.

Event researchers may find it of greater strategic value to focus on behavioral (e.g., expenditure) and psychographic (e.g., motivations) variables to distinguish segments and descriptive variables (e.g., demographic) to profile tourists (Tkaczynski & Rundle-Thiele, 2011). Further, although the accommodation option represents a moderately popular behavioral segmentation item (behind more frequently employed variables such as length of stay and expenditure), its industry relevance cannot be understated. Although event segmentation studies have focused extensively on tourists (Pechlaner et al., 2013; Peter & Anandkumar, 2016), event academics and practitioners may need to conduct future research with new innovative, accommodation options such as AirBnB and Flipkey potentially revolutionizing understanding of how and where event attendees stay during a performance and how this impacts a destination economically. Finally, although information sources such as digital media options (e.g., social media) have increased in prevalence (Liu et al., 2017; Wang & Cole, 2016), their importance as a segmentation variable remains inconclusive. Future research could examine how event attendees can be differentiated based on how they search for and share information (both online and offline) on their event experience before, during, and after its duration.

What Data Analysis Methods Were Applied to Segment Attendees?

Descriptive or univariate statistics remain the dominant analysis method for segmentation research. Extending beyond univariate treatment, numerous event segmentation researchers are using bivariate techniques such as analysis of variance (e.g., Daniels et al., 2012; Peter & Anandkumar, 2014) or regression (e.g., Savinovic et al., 2012; Son & Lee, 2011) in combination with descriptive statistics to profile attendees. Additionally, data reduction techniques such as factor analysis have been applied to assist researchers to profile segments and reduce data prior to clustering. This article calls for application of multivariate forms of data analysis such as cluster analysis in segmentation research,

permitting an event attendee rather than researcher driven profile to emerge.

Multivariate techniques allow researchers to simultaneously consider the role each individual factor has, which is more reflective of reality given identification of an event attendee persona to describe the identified segment involves more than a single variable. With the advancement of technology in data analysis techniques now available in PASW that was largely not available in the 1990s, which represented a major component of the initial review, employing these packages can allow greater analysis and validation (both internal and external), which can inform event attendee segmentation practice.

Have Sample Sizes Increased Over Time and do Sample Sizes Vary According to the Data Analysis Techniques Employed?

This review identified that samples employed in segmentation studies have not changed significantly in size over time. Although advancements in the amount of data and data collection technology are available to event researchers, it appears access to data may be problematic for researchers, limiting event researchers' ability to reach recommended sample sizes (e.g., Dolnicar & Grün, 2008; Dolnicar et al., 2014). This problem could be explained by the potentially small population (e.g., <500 people) at minor events such as specialized cultural celebrations or focused sports carnivals.

Limitations and Opportunities for Future Research

This research is not without its limitations. This review is based on a previous synthesis framework and is, therefore, restricted to the agenda reported in the earlier 2010 study. Consequently, certain analysis techniques such as the external validation employed by multivariate analysis cannot be compared and contrasted due to the unavailability of many data analysis multivariate techniques and their associated validated techniques (e.g., Two-Step Cluster Analysis) in the initial review (Tkaczynski & Rundle-Thiele, 2011). Secondly, this study has determined how event attendees are profiled but it has not aimed to identify why selected processes were employed. Future research can examine whether common sense or data-driven segmentation

(Dolnicar, 2004) approaches were considered by researchers and if theory development or theory testing was the aim for the research.

Future research opportunities for event segmentation research could include examining segmentation studies across different continents and across different event types to identify whether salient/important profiling attributes exist given the event context or country studied. Although festival motivation research based on previous literature has and will likely dominate event attendee segmentation research, an opportunity for future segmentation research is to segment a cohort of event attendees at different time periods (potentially before and after an event) to identify whether segments can be validated over time such as whether their motivations were fulfilled. Studying the validity measures employed by academics to profile attendees into specific segments (e.g., clusters) through multivariate analysis presents an opportunity for future research, considering the noted advancements in quantitative analysis in event research.

Finally, a research area of concern noted by Getz and Page (2016) is the lack of longitudinal event research. Additionally, longitudinal data assessments permit researchers to examine the predictive capability of segments derived. By understand the extent (or not) that a segment solution can explain event attendance behavior researchers can compare and contrast bases and measures used. Comparisons and contrasts permit identification of optimal measures and bases for prediction. Research effort that is directed towards assessing predictive capability of alternatives enhances the precision of our decision support tools over time.

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