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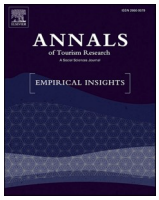

Tokyo 2020 and diversity attitudes of young residents: A latent change score analysis of effects of event identification

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ABSTRACT

This research applies social identity and self-categorization theories to investigate how changes in social identification with a mega-event are associated with changes in residents' universal-diverse orientation, a measure of attitudes toward diversity. Panel survey data from 581 young adult residents of Tokyo before and after the Tokyo 2020 Olympic and Paralympic Games were analyzed via latent change score modeling. Results indicate that these residents experienced a greater increase in universal-diverse orientation if they increased their identification with the Games to a greater degree, and this relationship was mediated by changes in their perceptions of how the event represented diversity-related values. Our findings underscore the importance of strengthening residents' social identification to expand the capacity of mega-events for diversity promotion.

1. Introduction

Mega-events, such as the Olympic and Paralympic Games and FIFA World Cups, are large and temporary attractors of tourists that contribute to local tourism development. However, public investments in these events are increasingly criticized because of insufficient economic returns to residents (Baade & Matheson, 2016), excessive infrastructure that has little utility after events (Müller, 2015), and the concern about overtourism (Duignan, Everett, & McCabe, 2022). The study of mega-events' social impacts—intangible effects that the hosted event has on residents' quality of life (Mair, Chien, Kelly, & Derrington, 2021)—therefore constitutes an important research area, as residents' support for mega-events increases when they expect or perceive these events to generate positive social impacts (Al-Emadi et al., 2017).

Of various social impact categories (cf. Mair et al., 2021), our focus is on the effects of mega-event hosting on residents' attitudes toward *diversity*. Diversity is defined as "any kind of individual difference that can exist between people" (Rink & Ellemers, 2007, p. S17), including—but not limited to—culture, ethnicity, nationality, gender, sexual orientation, and ability/disability. We place greater emphasis on the role of mega-events in promoting positive attitudes toward people from different cultural orientations and/or national origins.

A focused investigation into this aspect of mega-event impacts is significant and timely, given an emerging body of research concerning how tourism development may contribute to the valuing of diversity in society (Mitra, Chattopadhyay, & Chatterjee, 2022). Coincidentally, over the past decade several countries—including recent and future mega-event hosts such as Japan (Laurence, Igarashi, & Ishida, 2021) and France (Beddiar et al., 2017)—have seen a decline in the acceptance of people from different backgrounds by local citizens. This trend has been accelerated by the COVID-19 pandemic, which has amplified negative attitudes toward diverse others (Esses & Hamilton, 2021). In this context, as mega-events bring people (e.g., athletes/participants, event staff, media personnel) with diverse characteristics to host communities, these events may increase residents' awareness of individual and cultural diversity and lead them to accept and value diverse others. Hence, these events may constitute an important "social intervention" (Kaplanidou et al., 2013, p. 633) that engenders positive attitudes toward diversity in host communities.

Evidence indicates that residents tend to perceive mega-events to be instrumental in increasing their interests in other people, culture, and languages (Al-Emadi et al., 2017; F. Chen & Tian, 2015). In turn, these perceptions positively predict residents' support for mega-event hosting (Al-Emadi et al., 2017; Kaplanidou et al., 2013). However, this evidence

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is based on cross-sectional data concerning residents' self-reported perceptions of—or subjective beliefs in—the extent to which a focal mega-event impacted (or will impact) the host communities, as assessed before the event (Al-Emadi et al., 2017), after the event (F. Chen & Tian, 2015), or both (Kaplanidou et al., 2013). This evidence does not directly inform whether and/or how the hosting of mega-events *changed* residents' attitudes toward diversity.

Moreover, researchers examining broader effects of mega-events argue that the extent to which residents are susceptible to a mega-event's impacts depends on the activation of certain psychological processes (Smith, Ritchie, & Chien, 2019). Consequently, it can be speculated that a mega-event does not uniformly influence residents' attitudes toward diversity. Instead, residents who experience the activation of a given psychological process are more likely to develop positive attitudes toward diversity during mega-event hosting. However, we do not know about what *specific psychological processes* are involved in inducing changes in residents' attitudes.

To fill these gaps, we apply and extend the social identity approach (Abrams & Hogg, 1990). Using this theoretical approach, social psychologists propose two routes through which positive attitudes toward diversity may be engendered (Gaertner et al., 2016; Rink & Ellemers, 2007): first, creating a common superordinate social identity encompassing people from both ingroups and (former) outgroups (e.g., a mega-event embracing people with different cultures); and second, incorporating values related to diversity into the meaning of a social identity defining an ingroup (e.g., "unity in diversity" as a core mega-event theme). The social identity approach is used to explain tourism-related phenomena; for example, concerning how residents' social identity influences their support for inward tourism (Palmer, Koenig-Lewis, & Medi Jones, 2013). However, its applications to understanding how mega-events may produce social impacts remain limited (Mair et al., 2021).

Drawing upon the social identity approach, we seek to add novel insights to the tourism literature by demonstrating how changes in *social identification*—referring to the *strength of social identity* (Ashforth & Mael, 1989)—with a mega-event can induce changes in residents' attitudes toward diversity. In addition, based on the abovementioned second route derived from the social identity approach, we aim to determine whether the effect of social identification with a mega-event is established by changes in residents' perceptions of how the focal mega-event exemplifies values supporting the appreciation of diversity (Koenig-storfer & Preuss, 2018). Considering perceived event values in conjunction with social identification provides insight into the complex nature of tourism perceptions and residents' psychological processes (Farmaki & Pappas, 2022; Scarpi, Confente, & Russo, 2022).

We achieve these aims by assessing residents' attitudes toward diversity through the construct of *universal-diverse orientation*, which captures the behavioral, cognitive and affective aspects of individuals' universal attitudes toward all other persons (Fuertes, Miville, Mohr, Sedlacek, & Gretchen, 2000; Miville et al., 1999). Given its multifaceted nature and consideration of a range of diverse attributes, universal-diverse orientation serves as a comprehensive measure of one's general attitudes toward diversity (Lall-Trail, Salter, & Xu, 2021).

This research contributes to the tourism literature in three ways. First, by analyzing panel data collected from host city residents before and after a mega-event, the current research reveals the extent to which mega-event hosting may induce changes to residents' attitudes toward diversity as measured by universal-diverse orientation. Second, by examining the roles of residents' social identification with a mega-event (hereafter "event identification") and their perceptions of event values concerning the appreciation of diversity, this research illustrates psychological processes—as theoretically informed by the social identity approach (Abrams & Hogg, 1990)—that explain *how* residents' universal-diverse orientation change as a result of mega-event hosting. Third, our research methodologically advances research on social impacts of mega-events (Mair et al., 2021) by introducing latent change score modeling (Matusik, Hollenbeck, & Mitchell, 2021) as a novel analytical technique considering latent changes in residents' attitudes and perceptions related to mega-event impacts.

2. Research context

The tourism literature has examined the Olympic and Paralympic Games to develop knowledge on mega-event social impacts (Mair et al., 2021). For this research, we chose the Tokyo 2020 Olympic and Paralympic Games (hereafter "Tokyo 2020 Games") as a study setting. The Tokyo 2020 Games were held in 2021 from July 23 to 5 September after a one-year delay due to the COVID-19 pandemic. To control the spread of the coronavirus, almost all the competitions were conducted behind closed doors. This unique status as a mega-event characterized by a spectator ban and travel restrictions provided a significant context for assessing the social impacts of a mega-event in isolation, without the tourists it would normally attract. It was envisaged that this might provide additional and novel insights in the field of tourism impacts (Woosnam & Ribeiro, 2022), by exploring how mega-events may affect residents' attitudes even if the tourists they hope to attract are unable to attend.

In this regard, the choice of the social identity approach as our theoretical framework is appropriate, as fostering social identification does not require physical contact (Abrams & Hogg, 1990). Instead, social identification with a mega-event can be rendered salient through various *stimulus cues* (cf. Forehand, Deshpandé, & Reed, 2002) residents encounter during the hosting period, such as watching the event on television, reading stories about the event in the news, and seeing words and visual images (e.g., event name, logos, slogans) associated with the event on social media. According to our theorization, social identification with the Tokyo 2020 Games as strengthened by such cues—even in the absence of physical interactions with other residents, tourists, or event participants (e.g., athletes, officials)—can facilitate residents' universal-diverse orientation.

Regarding diversity promotion, the Tokyo 2020 organizers adopted "unity in diversity" as a core concept and promoted it as a central theme for the opening and closing ceremonies of the Olympic and Paralympic Games. This is exemplified by featuring high-profile mixed-race Japanese athletes, such as Naomi Osaka (a professional tennis player with a Haitian father) and Rui Hachimura (a National Basketball Association player with a Beninese father), at the Opening Ceremony of the Tokyo 2020 Olympics. In addition, symbolic events related to diversity issues were widely reported by the media during the hosting period. These included a podium protest to express solidarity for all people oppressed; the participation of transgender athletes; several athletes and teams taking the knee to protest against racism; and historical success by Japan's women's national basketball team including naturalized and biracial players and an American head coach. Moreover, the Tokyo 2020 Organizers announced the launch of an initiative called "Tokyo 2020 D&I (Diversity & Inclusion) Actions" during the event and implemented social media campaigns to encourage the public to pledge their support for realizing a more diverse and inclusive society.

Within this context, the target study population is young adult residents (18–25 years) of the Tokyo Metropolis. Among residents, we targeted this age cohort based on the impressionable years hypothesis (Krosnick & Alwin, 1989), which posits that individuals in late adolescence and early adulthood are more susceptible to social influences (e.g., social events, policies) when forming or changing their attitudes toward a certain issue. Consequently, any impact that a mega-event (as a social influence) has on residents' attitudes toward diversity is expected to be more pronounced for young adults, making this age cohort an important study population. In addition, young adulthood represents a critical period for learning important values necessary for becoming responsible citizens and future leaders in society (Lee & Suzanne Horsley, 2017). Therefore, the impact of mega-events on young adult attitudes toward diversity has societal importance from a long-term perspective.

3. Concptual framework and hypotheses

3.1. Social identity approach to diversity

The central propositions of the social identity approach come from social identity theory and self-categorization theory. According to social identity theory (Tajfel & Turner, 1979), when people use membership in a group (e.g., nationality) to define who they are (i.e., social identity), they become motivated to maintain a positive sense of their self-definition by favorably differentiating their group from other relevant outgroups on a valued dimension (e.g., seeing our country as more progressive than other countries). Self-categorization theory (Turner, Hogg, Oakes, & Reicher, 1987) extends the tenets of social identity theory, positing that social identity makes it possible for individuals to self-categorize them and others as members of the same ingroup on the basis of one or more shared categories (e.g., culture, gender, religion). This process of self-categorization drives people to hold a more positive attitude toward ingroup members who share a group membership over outgroup members who do not.

The attitudinal effects of social identity and the self-categorization process can explain why people tend to favor those who are similar and how more inclusive attitudes toward diverse others can be engendered by reducing this ingroup favoritism (Gaertner et al., 2016). Importantly, the boundary of who is included in, or excluded from, an ingroup is shifting and permeable depending on social circumstances (Inoue, Lock, Gillooly, Shipway, & Swanson, 2022). Thus, when an ingroup is more inclusively defined to encompass individuals who differ in characteristics (e.g., participants and supporters of a mega-event, including those from different countries), former outgroup members (e.g., foreigners) are perceived to be more attractive because of a shared membership in the inclusive ingroup (Gaertner et al., 2016).

The above idea serves as the basis for the common ingroup identity model (Gaertner et al., 2016). This model posits that it is possible to activate an overarching common ingroup identity between ingroup and outgroups that are originally distinguished on a given attribute (e.g., nationality) by rendering shared membership in an existing or emerging common superordinate category (e.g., supporting the same mega-event) salient. The activated common ingroup identity, in turn, can reduce intergroup bias and promote more harmonious attitudes toward members of the former outgroup, who are now seen as ingroup members because of the common identity (Gaertner et al., 2016).

3.2. Event identification as common ingroup identity

By applying the social identity approach (Abrams & Hogg, 1990) and the common ingroup identity model (Gaertner et al., 2016), we posit that local young adults' universal-diverse orientation can be increased by activating their common ingroup identity during a mega-event. Groups from which people derive their social identity can encompass any forms of human aggregates (Ashforth & Mael, 1989; Turner et al., 1987). Thus, events are a legitimate source of one's social identity (Chiang, Xu, Kim, Tang, & Manthiou, 2017; Cornwell & Coote, 2005; Schulenkorf, 2010). Social identification with an event leads people to see themselves and others who are part of the event community (e.g., athletes, organizers, sponsors, fans) as ingroup members and think and act in a way that contributes to the group's interests (Cornwell & Coote, 2005).

Because of their global reach, mega-events attract people across the world who engage through not just onsite attendance, but—more relevant to the COVID-19 context—television and online broadcasting and social media. In addition, core members of mega-events, such as event officials and athletes, come from different parts of the world and have a variety of attributes and backgrounds. Given this overarching nature of mega-events, social identification with a mega-event can be viewed as a form of common ingroup identity that can foster harmonious relations among individuals who would otherwise be categorized into different social groups (e.g., nationalities, cultures).

Indeed, studies on smaller events, such as a university sport match and community-based sport event, show that the social identification strengthened through these events facilitates interracial (Nier et al., 2001, Study 2) and interethnic (Schulenkorf, 2010) cooperation. Although no research has confirmed the applicability of this evidence to mega-events, based on the common ingroup identity model (Gaertner et al., 2016) it can be predicted that greater changes in social identification with a mega-event ("event identification") are associated with greater changes in positive attitudes toward diversity—as indicated by increased levels of universal-diverse orientation (Miville et al., 1999)—among residents. Thus, in the context of the Tokyo 2020 Games, we hypothesize:

Hypothesis 1. Changes in local young adults' social identification with the Tokyo 2020 Games will be positively associated with changes in their universal-diverse orientation.

3.3. The mediating role of perceived event values

Based on the social identity approach, another way to develop positive intergroup relations is to define the meaning of a social identity to embody the appreciation of diversity (Rink & Ellemers, 2007). This perspective is derived from self-categorization theory (Turner et al., 1987), which posits that: (a) the values and norms associated with a given social identity affect how ingroup members perceive and act, and (b) these members' compliance to the ingroup values/norms increases with greater degrees of social identification with the group. By applying these propositions of self-categorization theory, Rink and Ellemers (2007) theorized that values shared in a group can be defined to recognize and appreciate diversity in the group, which would engender positive attitudes toward diversity among those who identify with the group. Thus, to promote universal-diverse orientation among local young adults through a mega-event, values supporting diversity, as well as the event's close connection with these values, should be highlighted and actively communicated.

In this regard, recent mega-events have adopted policies and activities showcasing the appreciation of diversity. For example, both the London 2012 and Tokyo 2020 Games identified unity in diversity, referring to "respect for different cultures, gender, social backgrounds, perceptions, attitudes and opinions" (Bach, 2014, p. 2), as one of their core concepts (Hubbard & Wilkinson, 2015; The Tokyo Organising Committee of the Olympic and Paralympic Games, 2020). Relatedly, Koenigstorfer and Preuss (2018, 2022) have developed a survey scale for assessing residents' perceptions of values associated with the Games and validated the scale using data from residents in the United States, Germany, and Brazil. Their scale includes measures for a dimension of values (e.g., anti-discrimination, tolerance, equality)—*appreciation of diversity*—that focuses on recognizing and accepting differences in individual attributes and background. We adopt the dimension of the appreciation of diversity to measure residents' perceptions of the extent to which the Tokyo 2020 Games embodied values supporting diversity.

According to self-categorization theory (Turner et al., 1987), people become more aware of and susceptible to the values shared in their ingroup the more strongly they identify with the group. Moreover, perceptions of the ingroup values play a greater role in shaping attitudes for those with stronger social identification. Based on this theoretical logic, as local young adults strengthen their identification with a mega-event integrating diversity-related values (such as the Tokyo 2020 Games), they are more likely to recognize these values through event-related communications (e.g., messaging at opening and closing ceremonies, event publications and media stories highlighting diversity) and attribute the values to the event. In turn, these adults' enhanced perceptions of event values concerning the appreciation of diversity function as a mediator, establishing the relationship between identification with the mega-event and universal-diverse orientation. Thus, we expect

changes in local young adults' event identification to have positive effects on changes in their universal-diverse orientation through the mediation of changes in their perceptions of the event's values concerning the appreciation of diversity before and after the Tokyo 2020 Games. This leads to our second hypothesis:

Hypothesis 2. The relationship between changes in event identification and changes in universal-diverse orientation will be mediated by changes in perceived event values concerning the appreciation of diversity.

Our research model depicting the two hypotheses is presented in Fig. 1.

4. Methods

4.1. Participants and data collection procedure

Our target population is young adult residents (18–25 years) of the Tokyo Metropolis. To recruit participants from this population, we used an online panel provided by a Japan-based marketing research company (Macromill: https://www.macromill.com/). To be included in the sample, potential study participants needed to: (a) be 18–25 years old, and (b) live in the Tokyo Metropolis. Quota sampling was employed to ensure an equal representation of gender and age (11–14% for each target age) in the study sample.

Given the goal of understanding the impacts of the whole Tokyo 2020 Games (encompassing both the Olympic and Paralympic Games), we used panel data obtained from the pre-event survey (administered before the start of the Tokyo 2020 Olympics) and post-event survey (after the conclusion of the Tokyo 2020 Paralympics) to test our hypotheses. We distributed an invitation email including a link to the pre-event online survey to the Macromill panel on July 8, 2021, approximately two weeks before the Tokyo 2020 Olympics opening ceremony (July 23). This survey was open for four days, and 1003 individuals (50.3% female; mean age = 21.6 years [$SD = 2.3$ years]; 50.9% students, 34.8% full-time employees, and 14.3% in other employment categories) who met the inclusion criteria completed the survey. Of these 1003 respondents, 581 individuals (57.9% of the pre-event survey respondents) completed the post-event online survey, which was distributed on September 10, 2021—five days after the conclusion of the Tokyo 2020 Paralympics (September 5)—and was open for 12 days. According to Akis, Peristianis, and Warner (1996), when assuming that 50% of the population has positive responses and the other 50% has negative responses, the minimum sample size required to achieve the 95% confidence interval can be determined by: $n = 1.962 \times 0.50 \times 0.50/0.052 = 384$. Thus, our sample size ($n = 581$) was deemed sufficient to conduct a statistical analysis.

The 581 local young adults completing both the pre- and post-event surveys constituted the final sample of this study. We matched the responses from the two surveys for each respondent using participant identification numbers provided by Macromill to assess changes in their responses between the surveys.

4.2. Measures

All survey scales were adapted from scales originally developed and validated in English in prior studies and were translated into Japanese, which is the native language of the study sample. We employed a back translation technique (Brislin, 1986) to verify the accuracy of the Japanese translations. A full list of our survey items in English, along with the descriptive statistics of each item, is provided in Table 1.

4.2.1. Event identification

Respondents' event identification (i.e., degree of social identification with the Tokyo 2020 Games[1]) was measured using all six items (see Table 1) from Mael and Ashforth's (1992) scale. Previous research demonstrated the validity and reliability of these items for measuring one's identification with events (Chiang et al., 2017; Cornwell & Coote, 2005). All items were measured on a 5-point Likert scale from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*).

4.2.2. Perceived event values concerning appreciation of diversity

We used a four-item Appreciation of Diversity subscale developed and validated by Koenigstorfer and Preuss (2018) to assess participants' perceived event values concerning appreciation of diversity, or their perceptions of how the Tokyo 2020 Games represented values supporting the promotion of diversity. Each of the four items (shown in Table 1) described a specific value related to diversity, and participants were asked to indicate the extent to which each item illustrated the Tokyo 2020 Games on a 7-point scale Likert from 1 (*Does not describe the Tokyo Games at all*) to 7 (*Describes the Tokyo Games very well*). We employed a different response format for this construct to alleviate the concern for common-method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

4.2.3. Universal-diverse orientation

Universal-diverse orientation consists of the three dimensions of diversity of contact (the behavioral dimension), relativistic appreciation (the cognitive dimension), and a sense of connection with humanity (the affective dimension) (Fuertes et al., 2000; Miville et al., 1999). Of these, we measured the first two dimensions using items from the Miville-Guzman Universality-Diversity Scale-Short (Fuertes et al., 2000). Specifically, we adapted 10 items from the scale, including five for diversity of contact and another five for relativistic appreciation (see Table 1). Regarding the third dimension (i.e., a sense of connection with humanity), Fuertes et al. (2000) reported that the items in the Miville-Guzman Universality-Diversity Scale-Short did not capture this dimension as originally conceptualized by Miville et al. (1999). Therefore, four items as listed in Table 1 were adapted from McFarland, Webb, and Brown's (2012) scale assessing one's sense of connection with all humanity.

Across the three dimensions, all items were measured on a 5-point Likert scale from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). In estimating measurement models, we identified universal-diverse orientation as a second-order factor formed by the three dimensions (i.e., first-order factors) to achieve model parsimony (F. F. Chen, Sousa, & West, 2005). In addition, examining the higher-order construct, rather than focusing on its specific dimensions, is consistent with prior research

[1] For event identification and appreciation of diversity, considering the timing of data collection, we asked participants to answer each scale item with respect to the Tokyo 2020 Olympic Games in the pre-event survey and Tokyo 2020 Olympic and Paralympic Games in the post-event survey. The direct comparisons of the pre- and post-event data for each scale were possible because (a) in the Japanese context, the term "Tokyo 2020 Olympic Games" is commonly used to refer to the whole event encompassing the Olympic and Paralympic Games; and (b) results of measurement invariance testing indicated that each scale captured the same construct for both surveys.

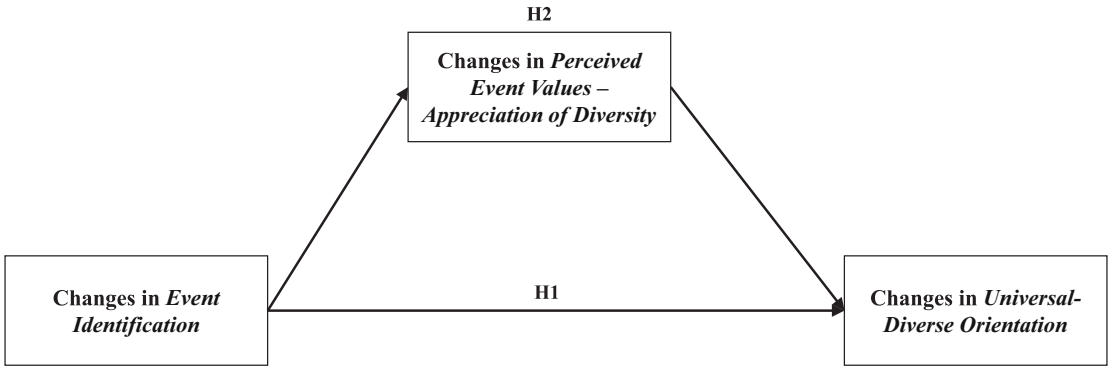

Fig. 1. Hypothesized research model. H = Hypothesis.

Table 1
Descriptive statistics for scale items in the pre-event and post-event surveys.

	Pre-event				Post-event			
Construct / Item	*M*	*SD*	SI	KI	*M*	*SD*	SI	KI
Event Identification (EID)								
EID1: When someone criticizes the Tokyo 2020 Games, I feel personally insulted.	2.07	1.16	0.66	−0.76	2.55	1.21	0.21	−0.90
EID2: I am very interested in what others think about the Tokyo 2020 Games.[a]	2.82	1.28	−0.06	−1.16	2.86	1.27	−0.06	−0.99
EID3: When I talk about the Tokyo 2020 Games, I usually say "we" rather than "they."	2.26	1.20	0.43	−0.95	2.57	1.23	0.20	−0.92
EID4: The Tokyo 2020 Games' successes are my successes.	2.13	1.17	0.62	−0.73	2.57	1.24	0.24	−0.89
EID5: When someone praises the Tokyo 2020 Games, it feels like a personal compliment.	2.14	1.22	0.62	−0.87	2.60	1.26	0.20	−0.98
EID6: If a story in the media criticizes the Tokyo 2020 Games, I would feel embarrassed.	2.17	1.17	0.52	−0.89	2.60	1.25	0.13	−1.02
Appreciation of Diversity (AD)								
AD1: Anti-discrimination	4.17	1.71	−0.38	−0.53	4.97	1.63	−0.72	−0.02
AD2: Diversity	4.69	1.70	−0.69	−0.10	5.12	1.58	−0.79	0.26
AD3: Equality	4.48	1.76	−0.50	−0.45	4.97	1.59	−0.70	0.09
AD4: Tolerance	4.21	1.62	−0.39	−0.19	4.92	1.53	−0.73	0.27
Diversity of Contact (DC)								
DC1: I would like to join an organization that emphasizes getting to know people from different countries.	2.90	1.24	−0.15	−0.97	3.12	1.11	−0.37	−0.42
DC2: I would like to go to dances that feature music from other countries.	2.57	1.23	0.21	−0.99	2.91	1.18	−0.10	−0.81
DC3: I enjoy listening to music from other cultures.	3.21	1.29	−0.38	−0.86	3.24	1.15	−0.40	−0.52
DC4: I am interested in learning about many different cultures.	3.27	1.27	−0.47	−0.78	3.34	1.16	−0.47	−0.42
DC5: When I attend events, it is a real positive if I get to know people from different cultural backgrounds.	3.16	1.29	−0.40	−0.90	3.28	1.08	−0.56	−0.08
Relativistic Appreciation (RA)								
RA1: Person with disabilities can teach me things I could not learn elsewhere.	3.22	1.13	−0.43	−0.39	3.34	1.07	−0.47	−0.14
RA2: I can best understand someone after I get to know how he/she is both similar and different from me.	3.39	1.15	−0.63	−0.27	3.51	1.03	−0.53	0.07
RA3: Knowing how a person is different from me enhances our friendship.	3.29	1.13	−0.52	−0.36	3.47	1.01	−0.58	0.28
RA4: In getting to know someone, I like knowing both how he/she differs from me and is similar to me.	3.20	1.16	−0.47	−0.56	3.34	1.06	−0.44	−0.13
RA5: Knowing about the different experiences of other people helps me understand my own problems better.	3.34	1.15	−0.57	−0.32	3.43	1.03	−0.59	0.21
Sense of Connection with Humanity (SCH)								
SCH1: I identify with all humans everywhere.	2.98	1.07	−0.20	−0.55	3.02	1.10	−0.12	−0.51
SCH2: I care (feel upset, want to help) when bad things happen to people anywhere in the world.	3.22	1.04	−0.42	−0.19	3.33	1.02	−0.48	0.04
SCH3: I believe in being loyal to all mankind.	3.41	1.02	−0.55	0.08	3.43	1.03	−0.57	0.22
SCH4: When they are in need, I want to help people all over the world.	3.39	1.03	−0.52	0.01	3.32	1.02	−0.52	0.01

Notes. $n = 581$; *M* = Mean; *SD* = standard deviation; SI = skew index; KI = kurtosis index.
[a] Removed for the main analyses due to low factor loadings.

which treated universal-diverse orientation as composite dependent variable (Lall-Trail et al., 2021).

4.3. Analysis

4.3.1. Measurement model analysis

To multi-item scales, we estimated two measurement models based on confirmatory factor analysis via Mplus 7.0, using data from each of the pre-event and post-event surveys. Each model consisted of event identification, appreciation of diversity, and the second-order factor of universal-diverse orientation. In assessing the fit of each model, we used the following indices: the model chi-square divided by the degrees of freedom (χ^2/df), comparative fit index (CFI), standardized root mean square residual (SRMR), and the Steiger-Lind root mean square error of approximation (RMSEA). These indices were identified by Kline (2005) as a required minimal set of fit indices that should be interpreted in assessing the results of models estimated using structural equation modeling techniques.

4.3.2. Latent change score modeling

As this study is concerned with the relationships between *changes* in the focal constructs, it is critical to employ an analytical technique that can assess such dynamic relationships. Therefore, we adopted latent change score modeling, which estimates change values (or scores) for each construct across time using its latent factors in each measurement occasion and then tests the degree of association between the estimated latent change scores for the constructs in a structural model (Matusik et al., 2021). Given the use of the structural equation modeling framework, latent change score modeling can capture the change occurring in constructs without computing observed difference scores. This addresses limitations of a conventional observed difference score approach, including its inability to take into account measurement error and poor

reliability (Matusik et al., 2021).

We used a syntax developed by Selig and Preacher (2009) to estimate a hypothesized latent change score model (see Fig. 2) including the latent change scores for event identification, appreciation of diversity, and universal-diverse orientation. The latent change scores for each of the constructs were estimated based on the construct's latent factors in both the pre- and post-event surveys. Then, the path from the latent change scores for event identification to the latent change scores for universal-diverse orientation was specified to test Hypothesis 1. The model also included paths (a) between the latent change scores for event identification and for appreciation of diversity, and (b) between the latent change scores for appreciation of diversity and for universal-diverse orientation. Then, we calculated the indirect effect based on the path coefficients for these two paths and examined the bias-corrected 95% confidence interval of the indirect effect to assess mediation by changes in appreciation of diversity as predicted in Hypothesis 2 (Selig & Preacher, 2009).

5. Results

The characteristics of the 581 participants in the final sample are as follows: 52.5% were female; 47.0% were students, 36.7% were full-time employees, and 16.3% were classified into other employment categories (e.g., part-time, self-employed, unemployed); and their mean age was 21.8 years (SD = 2.3 years). These values are comparable to the characteristics of the 1003 respondents completing the pre-event survey, alleviating a concern for nonresponse bias (Jordan, Walker, Kent, & Inoue, 2011). We also compared our sample with the population characteristics in Tokyo based on census data, confirming that the sample had similar characteristics to the population on key statistics (e.g., gender distribution).

5.1. Measurement model results

The results of a confirmatory factor analysis provided the following goodness-of-fit statistics for the measurement model for the pre-event survey: χ^2/df = 1017.139/246 = 4.134, CFI = 0.932, SRMR = 0.080, and RMSEA = 0.073. The goodness-of-fit statistics for the measurement model for the post-event survey are as follows: χ^2/df = 1007.548/246 = 4.096, CFI = 0.938, SRMR = 0.077, and RMSEA = 0.073. These statistics mostly supported the overall fit of the two measurement models; however, an examination of individual factor loadings revealed that for the pre-event model, one item in event identification ("I am very interested in what others think about the Tokyo 2020 Games") had a low factor loading value (0.49), indicating a problem of indicator reliability and validity for this item (MacKenzie, Podsakoff, & Podsakoff, 2011). Thus, we re-estimated the two measurement models by dropping this item from each.

The results of the revised measurement models are shown in Table 2. The goodness-of-fit statistics for each of the two models (χ^2/df = 868.306/224 = 3.876, CFI = 0.942, SRMR = 0.060, and RMSEA = 0.070 for the pre-event model; χ^2/df = 852.858/224 = 3.807, CFI = 0.947, SRMR = 0.064, and RMSEA = 0.070 for the post-event model) were better than those of the original models, indicating an improvement in model fit (MacKenzie et al., 2011). In addition, across the two models, all the constructs provided values greater than 0.70 for construct reliability and 0.50 for average variance extracted, supporting their reliability and convergent validity (MacKenzie et al., 2011).

As shown in Table 3, the discriminant validity of these constructs was further supported, as the square root of the average variance extracted of each construct exceeded the correlation coefficients between any pair of constructs in both models (MacKenzie et al., 2011). Additionally, for the three first-order factors of universal-diverse orientation, each factor had values greater than 0.70 for construct reliability and 0.50 for average variance extracted, providing evidence of adequate reliability and convergent validity (MacKenzie et al., 2011). To assess the discriminant validity of these factors, we compared a measurement model constraining all correlations between the factors to 1.0 with an unconstrained model that freely estimated the correlations (Anderson & Gerbing, 1988). Chi-square different tests for both pre- and post-event data indicated that the unconstrained model fit the data significantly better than the constrained model: $\Delta\chi 2$ (Δdf = 3) = 704.726, $p < .001$ for the pre-event data; $\Delta\chi 2$ (Δdf = 3) = 438.191, $p < .001$ for the post-event data. These results indicated that the three first-order factors of universal-diverse orientation were not correlated perfectly, providing evidence of discriminant validity for these factors (Anderson & Gerbing, 1988).

After confirming the properties of the scales for each survey, we conducted measurement invariance tests and established that across the two surveys, each scale was equivalent and measured the same construct (Matusik et al., 2021). Given the evidence of reliability and validity for each survey and results supporting the measurement invariance between the two surveys, we used the revised measurement models for subsequent analyses.

5.2. Mean comparisons between pre- and post-event data

Before estimating a latent change score model, we performed a series of paired t-tests to examine if the observed mean scores for each of the three focal constructs changed before and after the Tokyo 2020 Games. The results indicated that there was a statistically significant increase in all three constructs: event identification (t = 9.98, $p < .001$, mean difference = 0.42, Cohen's d = 0.41), appreciation of diversity (t = 9.44, $p < .001$, mean difference = 0.60, Cohen's d = 0.39), and universal-

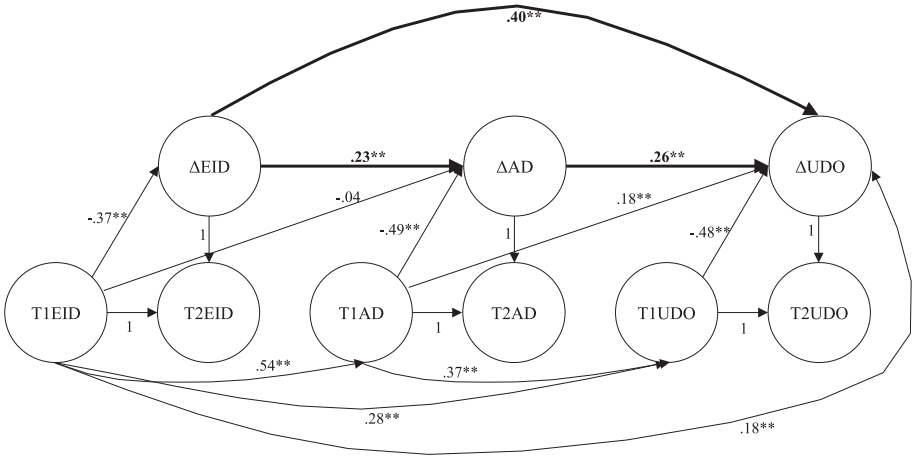

Fig. 2. Results of the latent change score model based on pre-event and post-event data. N = 581. Bold lines indicate the hypothesized paths. Unstandardized coefficient results are shown. *$p < .05$, **$p < .01$. T1EID = event identification for pre-event data. T2EID = event identification for post-event data. ΔEID = latent change scores for event identification. T1AD = appreciation of diversity for pre-event data. T2AD = appreciation of diversity for post-event data. ΔAD = latent change scores for appreciation of diversity. T1UDO = universal-diverse orientation for pre-event data. T2UDO = universal-diverse orientation for post-event data. ΔUDO = latent change scores for universal-diverse orientation.

Table 2
Standardized factor loadings, construct reliability coefficients, and average variance extracted for the pre-event and post-event measurement models.

	Pre-event				Post-event			
Construct / Item	β	α	CR	AVE	B	α	CR	AVE
Event Identification (EID)		**0.93**	**0.93**	**0.74**		**0.95**	**0.95**	**0.78**
EID1	0.82				0.85			
EID3	0.81				0.86			
EID4	0.90				0.92			
EID5	0.92				0.93			
EID6	0.84				0.84			
Appreciation of Diversity (AD)		**0.92**	**0.92**	**0.75**		**0.95**	**0.95**	**0.82**
AD1	0.80				0.89			
AD2	0.88				0.92			
AD3	0.92				0.93			
AD4	0.86				0.89			
Diversity of Contact (DC)		**0.90**	**0.90**	**0.66**		**0.90**	**0.90**	**0.64**
DC1	0.83				0.83			
DC2	0.69				0.68			
DC3	0.78				0.78			
DC4	0.84				0.84			
DC5	0.90				0.87			
Relativistic Appreciation (RA)		**0.93**	**0.93**	**0.72**		**0.91**	**0.92**	**0.68**
RA1	0.77				0.77			
RA2	0.91				0.84			
RA3	0.89				0.85			
RA4	0.84				0.82			
RA5	0.84				0.85			
Sense of Connection with Humanity (SCH)		**0.85**	**0.85**	**0.59**		**0.85**	**0.86**	**0.60**
SCH1	0.68				0.70			
SCH2	0.74				0.79			
SCH3	0.80				0.79			
SCH4	0.84				0.82			
Universal-Diverse Orientation[a]		**0.87**	**0.92**	**0.79**		**0.90**	**0.94**	**0.84**
Diversity of contact	0.92				0.92			
Relativistic appreciation	0.91				0.93			
Sense of connection with humanity	0.83				0.90			

Notes. $n = 581$; β = standardized factor loading; α = Cronbach's alpha; CR = construct reliability coefficient; AVE = average variance extracted. All standardized factor loadings were significant ($p < .01$).
The acronyms in this table correspond to those in Table 1.

Table 3
Descriptive statistics and correlations of the constructs in the pre-event and post-event surveys.

Constructs (pre-event)	*M*	*SD*	CR	AVE	1	2	3	4	5	6
1. Event Identification	2.15	1.05	0.93	0.74	(0.86)					
2. Appreciation of Diversity	4.39	1.52	0.92	0.75	0.36	(0.86)				
3. Universal-Diverse Orientation[a]	3.18	0.89	0.92	0.79	0.47	0.66	(0.89)			
4. Diversity of Contact	3.02	1.08	0.90	0.66	0.44	0.60	0.92	(0.81)		
5. Relativistic Appreciation	3.29	1.01	0.93	0.72	0.43	0.60	0.91	0.83	(0.85)	
6. Sense of Connection with Humanity	3.25	0.86	0.85	0.59	0.39	0.55	0.83	0.76	0.76	(0.77)
Constructs (post-event)	*M*	*SD*	CR	AVE	1	2	3	4	5	6
1. Event Identification	2.58	1.12	0.95	0.78	(0.88)					
2. Appreciation of Diversity	4.99	1.47	0.95	0.82	0.21	(0.90)				
3. Universal-Diverse Orientation[a]	3.29	0.89	0.94	0.84	0.55	0.68	(0.91)			
4. Diversity of Contact	3.18	0.96	0.90	0.64	0.50	0.62	0.92	(0.80)		
5. Relativistic Appreciation	3.42	0.89	0.92	0.68	0.51	0.63	0.93	0.85	(0.83)	
6. Sense of Connection with Humanity	3.28	0.87	0.86	0.60	0.49	0.61	0.90	0.82	0.84	(0.78)

Notes. $n = 581$. Values in parentheses represent the square root of the average variance extracted. All correlations are significant ($p < .01$).
[a] Represents a second-order factor. CR = construct reliability coefficient; AVE = average variance extracted.

diverse orientation ($t = 3.63$, $p < .001$, mean difference = 0.11, Cohen's d = 0.15). Based on the effect size estimates (Cohen's d), these values indicated close to a medium effect size for event identification and appreciation of diversity and a marginal to small effect size for universal-diverse orientation (Cohen, 1992). The marginal change in universal-diverse orientation underscores the importance of understanding specific psychological processes, as addressed in the current study, that may activate the impact of mega-event hosting that cannot be detected based on mere pre- and post-event mean comparisons.

5.3. Results of latent change score modeling

Fig. 2 illustrates the results of the latent change score model specified based on the conceptual research model. In Fig. 2, the hypothesized paths are indicated using bold arrows. The latent change score model had an adequate model fit: $\chi^2/df = 619.568/237 = 2.614$, CFI = 0.971, SRMR = 0.056, and RMSEA = 0.053. As hypothesized, the latent change scores for event identification had a significant positive effect on the latent change scores for universal-diverse orientation (ΔEID➔ΔUDO in Fig. 2): $B = 0.40$, $t = 11.47$, $p < .001$. This result supported Hypothesis 1. Specifically, the significant positive path coefficient between the latent change scores for event identification and those for universal-diverse

orientation reveals that increases in identification with the Tokyo 2020 Games during the hosting period were positively associated with increases in universal-diverse orientation. Moreover, the latent change scores for event identification positively affected the latent change scores for appreciation of diversity (ΔEID➔ΔAD): $B = 0.23$, $t = 2.92$, $p = .004$, which, in turn, had a positive effect on the latent change scores for universal-diverse orientation (ΔAD➔ΔUDO): $B = 0.26$, $t = 8.91$, $p < .001$. These direct paths produced a significant indirect path coefficient (ΔEID➔ΔAD➔ΔUDO): $B = 0.06$, $t = 2.64$, $p = .008$, with its bias-corrected 95% confidence interval [0.02, 0.10] excluding zero. The results provided evidence for the mediating effect of appreciation of diversity between event identification and universal-diverse orientation, supporting Hypothesis 2.

Regarding the other paths (indicated using non-bold arrows) in the latent change score model in Fig. 2, all the paths from the latent change scores to their corresponding constructs in the post-event survey as well as from the constructs in the pre-event survey to those in the post-event survey were fixed to 1.0. These paths were included to specify the latent change scores for each construct (Matusik et al., 2021). In addition, each of the remaining paths indicated the association between each construct in the pre-event survey and the latent change scores. For example, the path from event identification in the pre-event survey to the latent change scores for event identification (T1EID➔ΔEID) had a significant negative coefficient ($B = -0.37$, $t = -9.29$, $p < .001$), meaning that respondents with higher event identification in the pre-event survey experienced a smaller increase in event identification between the pre- and post-event surveys.

6. Discussion

6.1. Theoretical implications

The impact of mega-events on diversity conceptually refers to attitudinal changes that occur during the event-hosting phase (Mair et al., 2021); however, no prior work has empirically tested this conceptualization. Therefore, the first contribution of this research is to demonstrate the extent to which mega-event hosting can affect changes to local young adults' universal-diverse orientation—a measure of general attitudes toward diversity. Specifically, in the context of the Tokyo 2020 Games, we found that compared to pre-event levels, young adult residents significantly but marginally increased their universal-diverse orientation after the event. Moreover, our results indicate the conditional effects of the event, wherein respondents who increased their event identification to a greater degree during the hosting period experienced a greater increase in their universal-diverse orientation. This evidence offers new insights into mega-events' social impacts on diversity (e.g., Al-Emadi et al., 2017; F. Chen & Tian, 2015; Gibson et al., 2014) by shedding light on the notion that these impacts depend on the degree to which a mega-event fosters social identification among locals while being hosted.

Second, our research shows that changes in young adult residents' event identification had a direct effect on changes in their universal-diverse orientation, as well as an indirect effect through the mediation of changes in their perceptions of event values concerning the appreciation of diversity. Together with our theorization based on the social identity approach (Abrams & Hogg, 1990) and its application to diversity issues (Gaertner et al., 2016; Rink & Ellemers, 2007), our findings advance the two processes explaining how social identification with a mega-event facilitates the impact of event hosting on residents' universal-diverse orientation. The first (as indicated by the direct effect of event identification) is to activate a common ingroup identity (i.e., event identification) encompassing individuals (e.g., athletes, participants, fans, residents) who constitute the event as ingroup members. The second (as indicated by the indirect effect) is to shape the attitudes of residents identifying with the event based on diversity-related values (appreciation of diverse cultural backgrounds and national origins in our context) that are integrated into the event's ingroup social identity. The illustration of these processes represents a significant departure from previous tourism studies relying on social exchange theory in explaining the social impacts of tourism development (Rasoolimanesh, Jaafar, Kock, & Ramayah, 2015) and mega-events (Mair et al., 2021).

According to social exchange theory, residents would develop greater perceptions of a mega-event's impacts as they perceive receiving more psychological or experiential benefits from the event (Smith et al., 2019). Although scholars applied the theory as a general framework for understanding events' impacts on diversity-related perceptions and attitudes (Al-Emadi et al., 2017; Kaplanidou et al., 2013), a specific logic behind this application remains unclear. By synthesizing and empirically confirming the tenets of the social identity approach to diversity (Gaertner et al., 2016; Rink & Ellemers, 2007), the current research contributes to a more comprehensive and nuanced theoretical understanding of the capacity of mega-events to promote positive attitudes toward diversity among residents.

Third, our analysis of pre- and post-event panel data using latent change score modeling (Matusik et al., 2021) offers a robust assessment of the social impacts of mega-events (Mair et al., 2021). One limitation of prior social impact research is that it has not integrated pre-event baseline data that can be compared with post-event data to assess the impacts of mega-events (Mair et al., 2021). To address this limitation, the current research analyzed pre- and post-event attitudinal data collected from the same sample of young adult residents to examine the impacts of the Tokyo 2020 Games. In so doing, we have introduced to the tourism literature latent change score modeling as a novel theory testing technique that can reveal how latent changes in residents' attitudes before and after a mega-event are predicted by latent changes in their perceptions of event-related attributes, such as social identification and perceived values.

6.2. Practical implications

Our findings underscore the importance of strengthening residents' social identification with a mega-event during the hosting period to amplify the event's effects on diversity promotion in host communities. In this regard, prior evidence suggests that people tend to identify with an event when they perceive it as prestigious (Cornwell & Coote, 2005) and providing functional (e.g., high-quality event operation) and experiential (e.g., stimulating positive emotions) values for attendees and residents (Chiang et al., 2017). Hence, the implication for mega-event organizers is to strategically communicate these aspects of a focal mega-event to residents while it is being hosted, to enhance residents' image of— and their social identification with—the event. To broaden the impact of a mega-event, these communication efforts should be directed at not only residents attending the event but also those engaging with the event via traditional (e.g., television, radio, print media) and new media (e.g., websites, social media sites, augmented and virtual reality) platforms.

It is also essential to create structures that help residents maintain and enhance the salience of their event identification during the post-event period. Identity salience can be activated via stimulus cues associated with a given social identity, such as symbols, visual images, and words (Forehand et al., 2002). In the context of a mega-event, these cues may include an event's logos placed throughout the host city (symbols), photographs and paintings depicting key moments of the event exhibited at public venues (visual images), and event-related slogans and themes referenced in speeches by public figures (words). Event sites and facilities can further evoke nostalgic feelings toward mega-events (Hahm, Kang, & Matsuoka, 2021). Hence these venues should be made accessible to residents after a mega-event so that they will have the opportunity to connect back to—and reinforce their social identification with—the event during subsequent site visits.

7. Conclusions

In sum, in the context of the Tokyo 2020 Games, we have demonstrated that changes in event identification were positively associated with changes in young adult residents' universal-diverse orientation. In addition, this association was partly established by changes in the residents' perceptions of how the event exemplified values supporting diversity. The work presented here contributes to the theoretical and empirical understanding of the social impacts of tourism development (Woosnam & Ribeiro, 2022) and mega-events (Mair et al., 2021), especially in relation to the promotion of diversity in society. Despite the important insights drawn from this work, it is subject to some limitations.

First, this research focused on only one mega-event that was held during the unique circumstances created by COVID-19, most notably the absence of spectators and tourists. It is noteworthy that, during its preparation stage, the Tokyo 2020 Games faced opposition from groups of residents due to concerns about overtourism (Duignan et al., 2022) and the criticism regarding event hosting intensified in the period leading up to the Games opening because of situations surrounding COVID-19. To gain a richer understanding of how issues surrounding COVID-19 influenced the relationships tested in our study, we suggest that future research implements a follow-up qualitative study with Tokyo residents.

Second, as Japan is a relatively homogeneous society with increasing yet still limited numbers of ethnic minorities and foreign-born residents, the current findings may have limited relevance for those countries hosting future mega-events that have comparatively more diverse societies (e.g., the United States, Australia). To increase the generalizability of our findings, future studies should be conducted to assess the roles of social identification at upcoming Olympic and Paralympic Games, or other mega-events such as the FIFA World Cup, Commonwealth Games, and World Expos.

Third, we tested our hypotheses using data obtained from local young adults. Our focus on this age cohort is justified by the impressionable years hypothesis (Krosnick & Alwin, 1989) and is aligned with the Tokyo 2020 Games' emphasis on positively impacting local young people (Pavitt, 2022). Still, future research could increase the applicability of our findings by observing how mega-events' effects on diversity may vary across different age cohorts in the host community.

Fourth, this research examined changes that occurred during the hosting phase of the event. This assessment period is consistent with Mair et al.'s (2021) conceptualization of the impact of mega-events on diversity as effects accruing to residents *during* the event, whereas they proposed other social impact categories to be more pronounced during pre-event (e.g., civic pride) or post-event (e.g., volunteering) periods. Nevertheless, to provide greater insights into the duration of impacts from changes in social identification, it is desirable to investigate how the results may change when a longer period including pre-, during-, and post-event phases is considered.

Fifth, we administered the pre- and post-event surveys to the same respondents. Our use of this panel survey design was appropriate for understanding changes in residents' perceptions and attitudes as well as the relationships among these changes. However, it might have introduced potential response biases wherein respondents' exposure to the pre-event survey affected their responses in the post-event survey.

Sixth, our outcome variable—universal-diverse orientation—holistically captures individuals' general attitudes toward diversity (Lall-Trail et al., 2021). Yet, given that attitudes are a function of one's beliefs (Fishbein, 1963), future investigations may offer more comprehensive insights into the role of mega-events in diversity promotion by assessing changes in residents' beliefs in diversity, alongside their diversity attitudes.

Finally, based on the social identity approach (Abrams & Hogg, 1990), we investigated how changes in residents' event identification and perceived event values were related to changes in their attitudes toward diversity. Although these tested relationships have a strong theoretical basis, from the perspective of complexity theory, residents' attitudes may be affected by other factors beyond the two variables drawn from the social identity approach (Farmaki & Pappas, 2022; Scarpi et al., 2022). We suggest that future research explores additional predictors of residents' attitudes toward diversity and compare their effects with the effects of event identification and perceived event values.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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