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# Will They Stay or Will They Go? Community Features Important in Migration Decisions of Recent University Graduates

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## **Keywords**

brain drain, migration, community features, graduates, Rural Renaissance Community Index (RRCI)

## **Disciplines**

Civic and Community Engagement | Demography, Population, and Ecology | Leadership Studies | Place and Environment | Public Policy | Regional Economics | Rural Sociology | Urban Studies and Planning

## **Comments**

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Daniel W. Russell<sup>1</sup>, David Swenson<sup>1</sup>, and Christopher Seeger<sup>1</sup> [\[AQ1\]](#) [\[AQ2\]](#) [\[AQ3\]](#)

## Abstract

Rural regions of the United States have experienced detrimental out-migration, or brain drain, of college-educated individuals. The present study used survey data, gathered with an interactive website tool containing a comprehensive collection of economic and lifestyle features, to determine those most important in migration decisions for public university graduating seniors from the rural state of Iowa. Economic features (overall cost of living and a strong local economy) were ranked as the top features, followed by lifestyle features including two surprising features (access to basic consumer goods and access to health facilities). The impact of individual differences on the likelihood of moving and the selection of desired community features was also examined and proved to be statistically significant. For instance, in comparison with female graduates, male graduates selected educational level of residents and higher percentage of nonmarried residents features more frequently. Implications for policy development and marketing and economic development strategies are discussed.

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## Introduction and Justification

Migration patterns within the United States have received much study (e.g., Greenwood, 1985; Kodrzycki, 2001). In particular, the internal U.S. migration of recent college graduates is important to understand because a large portion of this group is in the process of migrating (Kodrzycki, 2001). Moreover, systematic evidence is needed that identifies factors affecting migration decisions. To tackle the issue, researchers (Gottlieb & Joseph, 2006; Kodrzycki, 2001; Winters, 2011) have used U.S. Census data and other sources of national survey data to identify migration patterns and to compare various economic and lifestyle features of the states involved in migration. Whereas a limited set of community features was examined, such studies have found associations between location features and growth in human capital.

A revealed preference approach was used in these studies, which means graduates were not asked directly about their decision criteria for selecting a location. Scholars (Hansen, Ban, & Huggins, 2003; Marlet & van Woerkens, 2005) have noted that the use of a stated preference approach, which entails asking graduates what factors affected their migration decisions, helps validate information from revealed preference studies. A few researchers have begun filling this void. For instance, Hansen et al. (2003) surveyed recent graduates from three

universities in Western Pennsylvania to determine where they lived after graduation and the reasons why. On the national level, a Gallup survey of 28,000 Americans in their 20s identified factors affecting location decision following graduation (Kim, 2010). Although these two studies included an array of community features, we believe a more comprehensive list of features should be developed and implemented to give a more accurate picture of what influences migration decisions of recent college graduates. This information would aid communities in creating more effective development and marketing efforts to attract these prospective residents.

A declining population in a region can have a negative impact on its economic development, and the loss of educated residents is particularly concerning because of the resulting impact on technology use and information synthesis (Artz & Yu, 2011; Hansen et al., 2003), community leadership, entrepreneurship, income, and consequent tax revenue (Mathur, 1999; Polgreen, 2004; Stricker, 2007). College graduates in the United States are

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more likely than high school graduates to leave their community (Kodrzycki, 2001; Waldorf, 2007). This loss of college-educated residents to other regions or states is a form of “brain drain.”

Brain drain has been identified as a major concern for policy makers in rural America (Artz, 2003; Gibbs, 2006; Mills & Hazarika, 2001). The state of Iowa has been particularly hard hit by brain drain (Iowa Department of Economic Development, 2007). Iowa loses more young, single, and college-educated adults than any other state except North Dakota. In fact, in 10 years Iowa’s workforce is projected to lose about 60,000 college-educated people every 5 years (McGee, 2009). This brain drain, combined with a surge in baby-boom retirements, has Iowa employers and government planners concerned that a labor shortage will occur between 2015 and 2025 (Eller, 2012; Iowa Department of Economic Development, 2007). Research is needed to help Iowa and other rural states identify ways to curtail the brain drain for the sake of economic vitality. However, literature that examines migration of college graduates has not focused solely on graduates from rural areas of the United States.

To this end, the present study surveyed graduating seniors from Iowa’s three state universities. They are located in the more rural west north-central region of the United States, which has experienced high levels of brain drain (Artz & Yu, 2011; Chomicki, 2009; Kodrzycki, 2001; McGranahan & Beale, 2002). The survey entailed a comprehensive collection of economic (e.g., strong local economy, overall tax rate) and lifestyle (e.g., safety, retail establishments) features, which provides a more complete understanding of features considered in migration decisions (see Table 1 for a complete list of factors and their constituent features). **AQ41**

Artz and Yu (2011) noted that many factors influence where college graduates choose to live, including individual differences. Individual differences, including gender (Frieze, Hansen, & Boneva, 2006) and having family in the state (Burke & Edelman, 2008), will be explored as they have been found to influence the importance of particular community features.

## Human Capital: An Important Factor in Economic Growth

Human capital is defined in a variety of ways. Frequently, it is defined as the percentage of the population 25 years and older with a bachelor’s degree or above (Florida, Gates, Knudsen, & Stolarick, 2006). Wojan and McGranahan (2007), examining rural counties, defined human capital as “the proportion of young adults (age 25-44) in the county with at least a college degree and the proportion of young adults in the local labor market with at least a high school diploma” (p. 140). Florida, Mellander, and Stolarick (2008)

**Table 1.** List of Community Features by Category Used in the Present Study.

Categories	Community features
Demographics	Education level of residents Gay and lesbian population of community Racial diversity of the community Younger median age of community members Higher percentage of nonmarried residents
Religion	Number of religious establishments (e.g., churches)
Economy	Strong local economy Number of artistic, scientific, and technology focused firms for community size
Education	Proximity to higher education institutions (e.g., colleges, community colleges) Quality of K-12 education Size of libraries
Cost of living	Median house/condo cost Overall cost of living (taxes not included) Overall tax rate
Health	Access to health facilities Healthy residents
Transportation	Highway access Public transportation
Quality of life	Environmental quality Safety Access to basic consumer goods (grocery, convenience stores, gas stations) Length of commute to work
Leisure, culture, and tourism	Events and attractions Retail establishments Restaurants and bars Movies and live performances Sports clubs, spectator sports
Recreational opportunities	Outdoor sports facilities, golf courses, tennis courts, ski facilities, bowling centers Nature parks, recreational water, and land facilities Walking and biking trails
Climate	Comfort index (humidity and temperature) Lower level of snowfall Number of sunny days per year
Internet access	High-speed Internet services
Community and business support	Residents are committed to the future of this community Community provides business assistance, services, and opportunities Community members are dedicated to buying from local businesses

have posited that using occupation rather than education is a better way to measure human capital, because occupation captures not only education but also the accumulation of “experience, creativity, intelligence, innovativeness, and entrepreneurial capacities” (p. 616). Florida (2002) coined this group rich in human capital, “the creative class.” It includes entrepreneurs and those paid to do scientific, technological, and artistic creative work.

Both the education-and occupation-based measures of human capital are positively associated with economic growth (i.e., regional wages or regional income). Florida's occupation-based measure has received support for being better than education in capturing human capital and predicting economic growth (e.g., Marlet & van Woerkens; 2007; McGranahan & Wojan, 2007), but others have questioned the soundness of Florida's theories, measures, and findings (see, Asheim & Hansen, 2009; Glaeser, 2004; Macgillis, 2009; McGranahan, Wojan, & Lambert, 2011; Peck, 2005). Given that our sample respondents were graduating seniors, some of who were still looking for a position, and there is support for a positive relationship between bachelor's-level educational attainment and economic (income and employment) growth (e.g., Gottlieb & Fogarty, 2003), we used an education-based definition of human capital. However, research exploring the migration determinants for occupation-based human capital samples (e.g., Marlet & van Woerkens, 2007) was also cited in the present study.

### Importance of Human Capital to Economic Development in Rural Areas

Although research by Glaeser, Florida, and others have mainly focused on the role of human capital or the creative class in economic development of urban locations, Glaeser (2004) postulated that low taxes, open space, and safety entice these highly skilled people to smaller communities in developed countries. In support of this supposition, 11% of nonmetropolitan counties in the United States in 2000 have been characterized as "creative class counties," based on their rank in the top quarter of all counties due to the proportion of residents employed in creative-class occupations (McGranahan & Wojan, 2007).

Regional economic development policy strategies from the 1950s to present have expanded from providing financial incentives to firms to promoting innovation and entrepreneurship (Drabenstott, 2006). Aligned with current trends, Swenson and Eathington (2004) suggested that rural communities would greatly benefit from fresh approaches to community growth and from the development, attraction, and retention of the creative class. Research supports the impact of human capital on the economic development of rural areas. For instance, whereas there are positive associations between entrepreneurial manufacturing enterprises and both quality of life and recreational attributes of rural areas, successful ventures depend on a highly skilled and creative workforce (Wojan & McGranahan, 2007). Such enterprises bring economic development to rural areas that do not have adequate amenities to support tourism (Wojan & McGranahan, 2007). In another article by McGranahan and Wojan (2007) nonmetropolitan counties with higher proportions of people in creative class occupations were associated with higher

rates of job growth during 1990-2004. Significant positive relationships were found between wages and the creative class for regions with large and small populations (Florida et al., 2008). This suggests that, instead of chasing smokestacks for development of rural areas, attracting human capital appears to be a viable alternative for achieving local economic growth (McGranahan & Wojan, 2007). Thus, there appears to be support for the positive impact of the creative class (human capital) on the economic development of rural regions, which lends support for our focus on migration decisions of graduating seniors from such a region.

### Economic and Lifestyle Features Important in Attracting Human Capital

Based on the following studies, it is evident that both economic and lifestyle features attract human capital or the creative class to urban as well as rural areas. In the introduction to *Economic Development Quarterly's* special issue on brain drain, Gottlieb (2011) cautioned readers that although lifestyle features have gained much traction in policies designed to attract talent, these features cannot replace economic features. Local governments and agencies have had some success in using various economic strategies to reverse or plug the brain drain, such as offering college scholarships (Groen, 2004, 2011), tax incentives for science and technology graduates (Artz, 2003), and paid internships (LaCapra, 2007). In support of the importance of economic features, Mills and Hazarika (2001) found that higher initial salaries were a strong incentive for migration from nonmetropolitan counties. Similarly, Hansen et al.'s (2003) survey of recent college graduates found that job and economic features (e.g., challenging job, starting salary, cost of living) were very important to those who stayed in the state and to those who left.

Economic and lifestyle features, in combination, have been found to be important determinants of migration (e.g., Andresen, 2012; Gottlieb, 2003; Graves, 1979; Greenwood, 1985; Hansen et al., 2003; Kodrzycki, 2001; Polgreen, 2004; Winters, 2011). Economic (e.g., job opportunities) and lifestyle (e.g., live performances and pubs per capita) features explained growth of the creative class in Dutch cities (Marlet & van Woerkens, 2005). Winters's (2011) analysis of migration patterns into nonmetropolitan U.S. counties revealed that economic (per capita income) and lifestyle features (climate, natural amenities) were associated with in-migration of college-aged students not enrolled in higher education, but these features had negative or insignificant effects on those who were enrolled.

Along with the draw of economic features such as high wages and low transportation costs to those with high human capital, Glaeser, Kolko, and Saiz (2001) advised local leaders to pay attention to creating "consumer cities" delineated by certain lifestyle features, such as interesting

architecture, spectator sports, opera, museums, and hotels, as well as authentic restaurants and specialized retail establishments. They encouraged policy makers to focus on creating safe communities and high-quality schools because of their importance in attracting human capital. Glaeser et al. (2001) also noted that cities offer the advantage of population density, which increases the opportunities to meet other single people. In support, using aggregate data Polgreen (2004) found that recent U.S. college graduates tend to move to locations with high levels of tourism, low crime rates, and larger populations of 25- to 34-year-old residents. Results of the aforementioned Gallup survey corroborated many of Glaeser et al.'s (2001) and Polgreen's (2004) conclusions: The ability to meet people and make friends, availability of jobs, availability of outstanding colleges and universities, and lifestyle amenities such as parks, open spaces, nightlife, and culture were important determinants of where to live for this group (Kim, 2010). Other researchers (Florida, 2006; Hansen et al., 2003; Winters, 2011) have supported the importance of universities to attracting human capital or creative talent and providing desired opportunities for continuing education.

Hansen et al.'s (2003) study of recent university graduates revealed that amenities touted as important in previous studies, such as night life, nationally ranked sports teams, geography, climate, outdoor recreation, and many young people were at the middle or bottom of the list of important features. Florida (2002) concurred that spectator sports were not high on the list of amenities for the creative class; instead, more authentic and "bohemian" amenities were desired (e.g., ethnic restaurants and live-music venues). Moreover, features not emphasized in past research such as "good roads, easy commute" and a "chance to help others," were found to be important to recent graduates (Hansen et al., 2003).

Both Glaeser et al. (2001) and Florida (2002) also espoused the importance of ethnic diversity to attract human capital or the creative class. Both saw diversity as fostering lifestyle features such as ethnic restaurants, cultural offerings, and a lively street scene that enhance migration. Florida's "tolerance" variable captured not only ethnic/racial diversity but also diversity in sexual orientation, arts-oriented professionals (bohemians), and acceptance of ideas (Florida, 2002; Florida et al., 2006). Conversely, ethnic and cultural diversity were not important to recent graduates in Hansen et al.'s (2003) survey.

### **Economic and Lifestyle Features Important in Iowa-Based Migration Studies**

Although the majority of the aforementioned studies examined urban migration, a small number of researchers have concentrated on rural migration. For instance, Artz and Yu (2011) examined Iowa State University alumni

graduating between 1982 and 2006 and found significant differences in preferences between those who chose a rural versus urban residence. Rural alumni emphasized nonpecuniary career goals such as building a business for children to inherit or having freedom in their work, whereas urban alumni valued earning higher incomes, amassing wealth, or developing new products.

In a series of reports based on survey data from residents who had recently moved, Burke and Edelman (2008) identified the importance of factors that influence migration within, to, and from 19 nonmetropolitan Iowa counties. In Report 1, they concluded that migration was influenced by four factors: work, being close to family and friends, community features, and housing. Whereas employment was found to be a major consideration in migration out of Iowa, being closer to family and friends, lower cost of housing, and wanting a less congested place to live were important reasons for moving into Iowa. Respondents who moved out of Iowa also commonly noted the desire for more ethnic diversity, as well as more arts, entertainment, or cultural activities. Therefore, there may be many factors that are considered when migrating.

Although Burke and Edelman's (2008) reports are quite comprehensive, they did not capture the human capital status of respondents and their reasons for migrating to, from, or within Iowa. The present study will help fill this gap by examining the determinants important in migration decisions for graduating seniors from the three state universities in Iowa. This study expands Artz and Yu's (2011) efforts that examined only Iowa State University graduates.

Whereas United States and Iowa-related migration research is equivocal in terms of identifying the economic and lifestyle features most important in shaping migration decisions, we postulate that recent economic conditions facing university graduates, and Iowa graduates in particular, may lead to a priority given to economic features. In spring 2010, Iowa was ranked third highest in the nation for the average level of debt of college and university graduates, with an average debt on graduation of \$29,598 (The Institute for College Access & Success, 2011). Iowa was ranked fourth highest with 72% of graduates having debt. Students in the three public universities in Iowa had an average debt of \$27,532 in 2010, which was only about \$1,400 less than students in Iowa's private not-for-profit-institutions (Iowa College Student Aid Commission, 2011). This level of debt combined with a 9.1% unemployment rate for recent college graduates, which was the highest annual rate on record, makes it difficult for these graduates to pay back their loans (The Institute for College Access & Success, 2011). Therefore, we propose that economic features (i.e., strong local economy; number of artistic, scientific, and technology-focused firms for community size; overall cost of living, and overall tax rate) will be ranked highly in the

present study. Because of the level of debt incurred by these graduates and the difficulty of getting mortgage loans for those without a stellar credit history, we posit that the economic features reflecting the purchase of real estate (e.g., median house/condo cost) will not be important to these graduates. Thus, the initial research question guiding this study is which community economic and lifestyle features will be considered as highly important to the migration decisions of graduating seniors from Iowa's state universities.

### The Influence of Individual Differences on the Importance of Features in Migration Decisions

Burke and Edelman's (2008) reports also illustrated that motivations for moving vary by demographic group. For example, being closer to parents and friends were two major motivators for 18- to 24-year-old residents who moved from another state. These two factors were much less important for those who were between 45 and 59 years old. Therefore, there may be strikingly different reasons for the brain drain of college students than for the migration of older residents.

According to Kodrzycki (2001), "which college graduates migrate is explained more by individual characteristics than by overall employment opportunities offered in the state where they graduated" (p. 21). For instance, college graduates were more likely to stay in the area after graduation if they went to high school and college in the same state (Hansen et al., 2003; Polgreen, 2004). Gender (Frieze et al., 2006) and marital status (Hansen et al., 2003) also had an impact on migration decisions and the importance of location features. Based on Burke and Edelman's (2008) findings, having a family in Iowa could influence migration decisions. The present study tested the impact of these individual differences on the likelihood of moving from their current town (Hypothesis 1). Because we have found little research (e.g., Hansen et al., 2003) that has identified the impact of individual differences on desired community features, we have explored whether these characteristics result in significant differences in desired community features. Specifically, we predict that (Hypothesis 1a) previous residence in Iowa, (Hypothesis 1b) gender, (Hypothesis 1c) with whom the student was moving (alone, friend, or spouse), and (Hypothesis 1d) having a family in Iowa will affect graduating seniors' likelihood of moving. Similarly, we expect to find that there will be significant differences in the desired community features based on graduating seniors' (Hypothesis 2a) previous residence in Iowa, (Hypothesis 2b) gender, (Hypothesis 2c) with whom the student is moving, and (Hypothesis 2d) having a family in Iowa.

### List of Community Features Used in the Present Study

A significant contribution of the present study is the comprehensive nature of the variables included in the survey, allowing for a better understanding of community features that shape migration decisions. Categories of variables included demographics of the residents; religion; economy; education; cost of living; health; transportation; quality of life; leisure, culture, and tourism; recreational opportunities; climate; Internet access; and community and business support. These factors have been identified as important by other researchers (Florida, 2002; Florida et al., 2006; Glaeser et al., 2001; Hansen et al., 2003; Marlet & van Woerkens, 2005; McGranahan & Wojan, 2007). Each category contains features that respondents could select as important in their migration decisions. For instance, outdoor recreational activities were an attractive feature for those migrating (Burke & Edelman, 2008). In the present study, this category contained features that researchers have suggested as important to those contributing human capital: walking and biking trails (Florida, 2002), nature parks, and recreational land and water facilities (McGranahan et al., 2011; McGranahan & Wojan, 2007). An additional feature was added—outdoor sports facilities, golf courses, tennis courts, ski facilities, and bowling centers—to capture other potentially important attractions. To ensure the comprehensiveness of the list, features drawn from "best places" rankings, such as *Money* magazine's annual Best Places to Live report (Kalwarski, Rosato, & Weisser, 2005), supplemented the variables drawn from previous research. Some of the supplemental features were environmental quality, access to health care facilities, and healthy residents. Still other features (e.g., access to mass transportation, access to highways, residents buy locally) came from two pretest focus group studies completed by the authors with Iowa State University students or rural Iowa community residents.

We chose to use a list of community features that was more expansive than those found in previous studies. Previous research results have reported variability in the importance of particular community features due to location, individual differences of the sample, or list of community features included in the study. Due to this lack of consensus in the literature, we did not posit the relative importance of individual community features to graduating seniors in the current study.

### Research Design

#### *Instrument Development*

Focus groups with open-ended questions regarding features important in migration decisions on graduation helped ensure a comprehensive list of potential features for the quantitative

instrument. Five focus group sessions were conducted with graduating seniors from a major university in Iowa; a total of 28 respondents across 12 different majors (e.g., Apparel, Merchandising, and Design; Business Management; Landscape Architecture; Engineering; Community and Regional Planning; Marketing; Hospitality Management; Advertising; Music; Fine Arts; Graphic Design; Agricultural Business) provided researchers with information regarding the factors they considered when choosing a place to live after graduation (e.g., staying close to family, job offers, many cultural offerings). Focus group interviews were recorded, and the data were transcribed and then analyzed using qualitative data analysis techniques (i.e., Corbin & Strauss, 1990). Researchers identified themes and new insights, while also considering how this information fit with existing literature. After individually categorizing the transcribed text into themes, two coders discussed conflicting categorization of themes until agreement was reached.

Once the quantitative instrument was constructed, a website development firm converted it into an online interactive tool. The online instrument began with questions used to collect demographic data and questions regarding migration such as the likelihood of moving in the next 6 months (1 = *not at all likely*, 7 = *very likely*), what states (other than Iowa) they were considering for relocation, and with whom they would be relocating. Respondents were also asked if they were past residents of Iowa and if they have family currently living in Iowa. The interactive tool followed, which captured community features important in their migration decisions. Here respondents were asked to select up to 10 community features (from the list found in Figure 1) that were most important to them. The respondents were not asked to rank-order the features, as this would be a difficult task with 10 features (Einhorn, 1971). Once respondents entered the community features important to them, the interactive tool generated a list of rural communities in Iowa that best matched these criteria with links to detailed information about each community. Respondents could change the selected features; however, as in other survey data-collection procedures, only the first response (i.e., first set of selected featured) was used in the data analysis for the present study.

Seven graduate students pilot-tested the online interactive tool for clarity of wording and instruction and for operation before it was pilot-tested with graduating seniors drawn from one major university in Iowa. For this pilot study, the online survey was sent to 4,079 graduating seniors, followed by a reminder e-mail sent after 2 weeks. As an incentive, respondents could enter a drawing for a chance to win one of two \$50 Visa check cards. A total of 312 useable responses were collected, resulting in an 8% response rate.

### *Sample Respondents and Data Collection Procedure*

Graduating seniors from Iowa's three state universities (Iowa State University of Science and Technology [ISU],

University of Iowa [U of I], and University of Northern Iowa [UNI]) were surveyed. ISU is a public, land-grant institution with strong agriculture and engineering colleges. ISU is a major national research university with a total undergraduate enrollment of 23,343 and 5,544 professional and graduate students (Iowa State University, 2012) at the time of the study. The U of I is a major public research institution, including medical and law schools, with a total undergraduate enrollment of 21,565 and about 9,300 professional and graduate students (U of I, 2012). The UNI is a public institution known for its education programs, with a total undergraduate enrollment of 11,391 and approximately 1,800 professional and graduate students (UNI, 2012).

Researchers obtained the necessary human subject's approval from all three Iowa universities. A directory list with e-mail addresses for all spring graduating seniors was obtained from the registrar's office of each university. A cover letter explaining the study, along with a link to the interactive tool, was sent by e-mail to 6,551 students (2,604 from ISU, 2,913 from U of I, and 1,034 from UNI). To ensure that a moving decision had likely been contemplated, the e-mail was sent out during the last month of classes for the academic year. This resulted in 570 responses within 2 weeks. At that point, a reminder e-mail was sent to increase response rate, which yielded 191 additional responses by mid-May. As an incentive, respondents could enter a drawing with a chance to win one of two \$50 Visa check cards. Data were analyzed using SPSS 18; descriptive statistics, rank-order correlations, and chi-square analyses were used to analyze the data.

## **Results and Discussion**

### *Demographics of Respondents*

A total of 761 from the sample of 6,551 graduating seniors representing the three public universities in Iowa participated in the online survey. This reflected a 12% overall response rate. The sample was composed of male (30.7%) and female (69.3%) students enrolled at the U of I ( $n = 324$ ; 11% response rate), ISU ( $n = 327$ ; 13% response rate), and UNI ( $n = 110$ ; 11% response rate). The average age of the sample was 23.4 years old; even though this is slightly higher than the average age of 21 for the study's population of graduating seniors (see Table 2), it does align with a recent report from the U.S. Census Bureau written by Ryan and Siebens (2012) that shows the increasing age of graduating students. Eighty-three percent of participants indicated they were past residents of Iowa and 76.5% of the participants had family in Iowa. A majority of the participants reported they would be moving alone (53.8%). Others reported moving with a spouse or life partner (20.1%), with a friend (15.4%), or with family (10.8%). The top five most frequently considered states to live after graduating (other than Iowa) were Illinois (26.2%), Minnesota (20.5%), Colorado (17.8%), California (15.7%), and Missouri (11.1%).

**Table 2.** Characteristics of the Current Sample and the Population of Graduating Seniors From the Three State Universities of Iowa.

Characteristic	Sample mean	Population mean	Sample percent	Population percent
Age in years ( $n = 744$ )	23.4	20.7		
Gender ( $n = 748$ )				
Male ( $n = 230$ )			30.7	48
Female ( $n = 518$ )			69.3	52
Residency in Iowa ( $n = 761$ )				
Past residents of Iowa ( $n = 630$ )			82.8	
Non-past residents of Iowa ( $n = 131$ )			17.2	
Moving with ( $n = 651$ )				
Alone ( $n = 350$ )			53.8	
A spouse or life partner ( $n = 131$ )			20.1	
A friend ( $n = 100$ )			15.4	
Family ( $n = 70$ )			10.8	
The top five most frequently considered states other than Iowa ( $n = 606$ )				
Illinois ( $n = 159$ )			26.2	
Minnesota ( $n = 124$ )			20.5	
Colorado ( $n = 108$ )			17.8	
California ( $n = 95$ )			15.7	
Missouri ( $n = 67$ )			11.1	

Note. 43.7% of Iowa State University of Science and Technology undergraduate students are female, 58.5% of University of Northern Iowa undergraduate students are female, 51% of University of Iowa undergraduate students are female.

### Respondents' Community Feature Preferences

Concerning the major research question posed for this study, graduating seniors were asked to select up to 10 community features important to their migration decisions. Based on their selection of important community features, frequencies were determined. A percentage was then calculated by dividing the frequencies by the total number of respondents. These percentages were used to determine rankings for each community feature (1 = *most frequent*). This approach is supported by Jacoby (2011), who suggested rankings as a valid method for reporting value importance. In the present study, we created rankings based on reported frequencies to indicate the relative importance of selected community features to the migrations decisions of graduating seniors. A ranking of all community features in the study is presented in Table 3. As expected, economic features were most important. More than half of the students considered the overall cost of living (Rank 1, 66%) and a strong local economy (Rank 2, 57%) as key features when making migration decisions. This finding is consistent with extant literature regarding the influence of economic

considerations on migration patterns of 15- to 24-year-old residents (Gottlieb, 2003). Additionally, in their survey of recent college graduates, Hansen et al. (2003) reported that economic features (e.g., cost of living) were highly important to both those who stayed in the state and those who left.

With regard to lifestyle features, the items frequently selected by Iowa graduating seniors included safety (Rank 3, 48%), access to basic consumer goods (Rank 4, 46%), access to health facilities (Rank 5, 44%), restaurants and bars (Rank 6 [tie], 38%), education level of residents (Rank 6 [tie], 38%), events and attractions (Rank 8, 37%), proximity to higher education institutions (Rank 9 [tie], 36%), and the length of commute to work (Rank 9 [tie], 36%). Interestingly, participants in this study valued community features related to education, such as educational level of residents (Rank 6 [tie], 38%), proximity to higher education institutions (Rank 9 [tie], 36%), and quality of K-12 education (Rank 11, 35%). In support, other researchers (Florida, 2006; Glaeser et al., 2001; Hansen et al., 2003) have noted the important role that education plays in attracting human capital or creative talent.

### Predictors of Moving

The first set of analyses focused on factors that affected graduating seniors' likelihood of moving (Hypothesis 1). Likelihood of moving (range from 1 = *not at all likely* to 7 = *very likely*) was dichotomized as a low likelihood of moving (1 to 3 on the scale) and a high likelihood of moving (5 to 7 on the scale); the value of 4 on the scale (*somewhat likely*) was excluded as it was considered a neutral value. For this series of hypotheses, chi-square analyses were used to examine the association of individual characteristics (i.e., previous residence in Iowa, gender, moving partner status, and having family in Iowa) and graduating seniors' migration decisions. A statistically significant relationship was found between being a previous resident of Iowa and the likelihood of moving—Hypothesis 1a:  $\chi^2(1, N = 683) = 11.48, p < .001$ . Graduating seniors who were not past residents of Iowa (89.4%) showed a greater likelihood of moving compared with graduates who were past residents of Iowa (74%).

No statistically significant differences were found between males and females related to moving likelihood—Hypothesis 1b:  $\chi^2(1, N = 679) = 3.07, p = .08$ . This finding mirrors that of other brain drain research (Stricker, 2007; Tornatzky, Gray, Tarant, & Zimmer, 2001) that found gender to not be a significant predictor of likelihood to out-migrate. Moving partner status (i.e., moving alone, with a friend, with family, or with a spouse) had a statistically significant influence on moving likelihood—Hypothesis 1c:  $\chi^2(3, N = 587) = 26.05, p < .001$ . Graduating seniors who were moving with a family (92%) or moving alone (91.1%) showed a greater likelihood of moving than graduating seniors who were moving with friends (83%) or moving with a spouse or life partner (73%).

**Table 3.** Rankings for Desired Community Features.

Community features	Ranking of feature	Percentage of respondents	Frequency
Overall cost of living (includes property rental; taxes not included)	1	66	505
Strong local economy	2	57	435
Safety	3	48	369
Access to basic consumer goods (grocery, convenience stores, gas stations)	4	46	353
Access to health facilities	5	44	338
Education level of residents	6	38	291
Restaurants and bars	6	38	286
Events and attractions	8	37	278
Proximity to higher education institutions (e.g., colleges, community colleges)	9	36	272
Length of commute to work	9	36	272
Quality of K-12 education	11	35	268
Younger median age of community members	12	33	250
Nature parks, recreational water, and land facilities	13	30	231
Highway access	14	29	217
Environmental quality	14	29	217
High speed Internet services	16	28	210
Median house/condo cost	17	27	209
Number of artistic, scientific, and technology focused firms for community size	18	24	185
Public transportation	18	24	184
Walking and biking trails	20	21	159
Outdoor sports facilities, golf courses, tennis courts, ski facilities, bowling centers	21	19	148
Residents are committed to the future of this community	21	19	145
Comfort indices (humidity and temperature)	21	19	144
Healthy residents	24	18	140
Number of religious establishments (e.g., churches)	25	16	124
Retail establishments	26	15	115
Movies and live performances	27	14	106
Racial diversity of the community	27	14	104
Sports clubs, spectator sports	29	12	91
Overall tax rate	30	9	67
Higher percentage of nonmarried residents	31	8	64
Number of sunny days per year	31	8	61
Size of libraries	33	7	57
Community members are dedicated to buying from local businesses	34	6	49
Lower level of snowfall	34	6	47
Community provides business assistance, services, and opportunities	34	6	46
Gay and lesbian population of community	37	5	38
Total			7,075
Missing value			535
All value			7,610

Note.  $N = 761$ . Based on each participant's 10 most important community feature selections, frequencies were determined, which were then used to determine rankings for each community feature (1 = most important).

A statistically significant relationship was found between having family members in Iowa and likelihood of moving—Hypothesis 1d:  $\chi^2(1, N = 683) = 12.09, p < .001$ . Graduating seniors who do not have family members in Iowa (87.3%) indicated a greater likelihood of moving compared with those who have family members in Iowa (74.1%). This finding aligns with research by Frieze et al. (2006), which found family centrality, the importance of family to one's life, to be the most important predictor of the desire to stay or leave one's geographic roots. Artz and Yu (2011) also found rural origin to be a significant predictor of rural residency in their study of more than 5,000 college-educated adults who graduated from a Midwestern university between 1982 and 2006.

### Prediction of Desired Community Features

The next set of analyses examined differences in graduates' selection of desired community features based on individual characteristics: previous residence in Iowa (Hypothesis 2a), gender (Hypothesis 2b), moving partner status (Hypothesis 2c), and having family in Iowa (Hypothesis 2d). For Hypothesis 2a, a statistically significant association was found between previous Iowa residency and the likelihood of selecting safety as a desired community feature— $\chi^2(1, N = 761) = 3.95, p = .047$ . Previous nonresidents of Iowa (55.7%) showed interest more often in safety as a desired community feature than did previous residents (46.2%). This suggests that it is a misperception to think that living in a rural area leads graduates to fear moving to cities because of their higher crime rates. Perhaps nonresident students came to an Iowa university because it is safe, and this feature is also salient in their decisions when moving on graduation. Iowa ranks sixth in the safest neighborhoods in the United States (Boba Santos, O'Leary Morgan, & Morgan, 2011). Another possible explanation is that nonresidents enjoy the experience of living in a safe community during their time in college, which makes it prominent in their migration decision on graduation. Nevertheless, safety was ranked third overall, which indicates its importance as a community selection criterion to the student sample in general.

In the next hypothesis (Hypothesis 2b), when comparing female graduating seniors with male graduating seniors, females selected the following community features more frequently: safety,  $\chi^2(1, N = 748) = 17.63, p < .001$ ; access to health facilities,  $\chi^2(1, N = 748) = 4.68, p = .03$ ; events and attractions,  $\chi^2(1, N = 748) = 4.20, p = .04$ ; retail establishments,  $\chi^2(1, N = 748) = 4.14, p = .042$ ; racial diversity of the community,  $\chi^2(1, N = 748) = 10.25, p = .001$ ; and size of library,  $\chi^2(1, N = 748) = 5.08, p = .024$ . Conversely, in comparison with females, males selected the following community features more frequently: educational level of resident,  $\chi^2(1, N = 748) = 11.04, p = .001$ ; outdoor sports facilities, golf course, tennis courts, ski facilities, and

**Table 4.** Significant Differences in Desired Community Features Based on Gender (Hypothesis 2b).

Community features	Number (%)			Pearson $\chi^2$		Significance
	All ( <i>n</i> = 748)	Female ( <i>n</i> = 518)	Male ( <i>n</i> = 230)	Value	<i>df</i> (two-sided)	
Safety	356 (47.6)	273 (52.7)	83 (36.1)	17.63	1	.000
Access to health facilities	327 (43.7)	240 (46.3)	87 (37.8)	4.68	1	.030
Events and attractions	268 (35.8)	198 (38.2)	70 (30.4)	4.20	1	.040
Retail establishments	111 (14.8)	86 (16.6)	25 (10.9)	4.14	1	.042
Racial diversity of the community	104 (13.9)	86 (16.5)	18 (7.8)	10.25	1	.001
Size of library	56 (7.5)	49 (9.5)	7 (3.0)	9.47	1	.002
Education level of residents	285 (38.1)	177 (34.2)	108 (47.0)	11.04	1	.001
Outdoor sports facilities, etc.	126 (16.8)	67 (12.9)	59 (25.7)	18.39	1	.001
Sports clubs, spectator sports	79 (10.6)	45 (8.7)	34 (14.8)	6.27	1	.012
Higher percentage of nonmarried residents	64 (8.6)	33 (6.4)	31 (13.5)	10.28	1	.001
Overall tax rate	65 (8.7)	37 (7.1)	28 (12.2)	5.08	1	.024

bowling centers,  $\chi^2(1, N = 748) = 18.39, p < .001$ ; sports clubs and spectator sports,  $\chi^2(1, N = 748) = 6.27, p = .012$ ; higher percentage of nonmarried residents,  $\chi^2(1, N = 748) = 10.28, p = .001$ ; and overall tax rate,  $\chi^2(1, N = 748) = 5.08, p = .024$ . These results build on existing research that found similar features (e.g., low crime rate, outdoor recreation and cultural attractions, and demographic features) influenced graduating seniors' migration decisions (Glaeser et al., 2001; Hansen et al., 2003; Winters, 2011, respectively). Our findings provide insight concerning community features that are important based on gender of graduating seniors (see Table 4).

As shown in Table 5 (Hypothesis 2c), graduating seniors moving with family members or with a spouse or life partner indicated quality K-12 education as important more often than did the other moving partner status groups— $\chi^2(1, N = 651) = 26.19, p < .001$ . It is logical that graduating seniors with children or those who may have children in the near future consider the quality of K-12 education paramount when evaluating a community (Smith, 2012). In comparison, graduating seniors moving alone and with friends viewed younger median age of community members— $\chi^2(1, N = 651) = 14.28, p = .003$ —and higher percentage of nonmarried residents as important community features— $\chi^2(1, N = 651) = 15.20, p = .002$ . One plausible explanation supporting this finding is that graduates may look for people their age because they are looking for friends and mates, whereas the other groups are more family oriented or have a mate. This finding is supported by Kim (2010), who cited the ability to meet people, make friends, and socialize as important

determinants of migration decisions for young people ages 25 to 34 years.

For Hypothesis 2d, findings show that graduating seniors with family members in Iowa indicated that quality of K-12 education— $\chi^2(1, N = 761) = 7.24, p = .007$ —and availability of outdoor sports facilities, golf courses, tennis courts, ski facilities, and bowling centers— $\chi^2(1, N = 761) = 3.94, p = .047$ —as important, more often than graduating seniors who do not have family members in Iowa. Conversely, graduating seniors who have no family members in Iowa selected access to basic consumer goods,  $\chi^2(1, N = 761) = 4.45, p = .035$ ; public transportation,  $\chi^2(1, N = 761) = 4.80, p = .028$ ; and healthy residents,  $\chi^2(1, N = 761) = 4.04, p = .044$  as important community features more often than did students with family members in Iowa. For Hypothesis 2d, these findings may well be reflective of growing preferences for a healthy, more sustainable lifestyle such as engaging in sports activities, focus on basic consumer goods, and use of public transportation. Improving the personal health and fitness of Iowa residents is the goal of Iowa's Healthiest State Initiative (<http://www.iowahealthieststate.com/about/about-the-initiative>). Iowa is ranked the 16th healthiest state in the nation and is striving for an even higher ranking. This emphasis follows growing national initiatives on access to healthy foods, the importance of wise food choices, and getting and staying active at all ages (The White House, 2011). Therefore, Iowa's efforts may not only enhance the well-being of current residents but may also attract new residents. Desired community features based on having (or not having) family members in Iowa are shown in Table 6.

## Conclusions and Implications

In this study, graduating seniors from Iowa's three state universities were asked to select up to 10 community features that were most important to them. From this extensive list of community features, cost of living and strength of the local economy were indicated to be of primary importance. This finding suggests that students seeking to relocate after graduation consider employment opportunities, affordability of living, and vibrancy in the local economy as being most important. Considering that Iowa was recently ranked as the state with the fourth highest level of college debt per student (The Institute for College Access & Success, 2011), our findings clearly reflect the importance of a strong economy and employment opportunities to Iowa college graduates. For our sample, economic features ranked first and second in importance, followed by quality-of-life features (i.e., a safe living environment, access to consumer goods and services, and length of commute to work). Our results suggest that both economic and lifestyle features are important in migration decisions for graduating seniors.

**Table 5.** Significant Differences in Desired Community Features Based on Moving Partner Status (Hypothesis 2c).

Community features	Number (%)					Pearson $\chi^2$		
	All ( <i>n</i> = 651)	Alone ( <i>n</i> = 350)	With a friend ( <i>n</i> = 100)	With family ( <i>n</i> = 70)	With a spouse or a life partner ( <i>n</i> = 131)	Value	<i>df</i>	Significance (two-sided)
Quality of K-12 education	221 (33.9)	110 (31.4)	18 (18.0)	34 (48.6)	59 (45.0)	26.19	3	.001
Younger median age of community members	215 (33.0)	125 (35.7)	43 (43.0)	15 (21.4)	32 (24.4)	14.28	3	.003
Higher percentage of nonmarried residents	55 (8.4)	36 (10.3)	14 (14.0)	3 (4.3)	2 (1.5)	15.20	3	.002

**Table 6.** Significant Differences in Desired Community Features Based on Having Family Members in Iowa (Hypothesis 2d).

Community features	Number (%)			Pearson $\chi^2$		
	All ( <i>n</i> = 761)	Having family members in Iowa ( <i>n</i> = 582)	Having no family members in Iowa ( <i>n</i> = 179)	Value	<i>df</i>	Significance (two-sided)
Quality of K-12 education	268 (35.2)	220 (37.8)	48 (26.8)	7.24	1	.007
Outdoor sports facilities, golf, tennis, ski facilities, bowling centers	126 (16.6)	105 (18.0)	21 (11.7)	3.94	1	.047
Access to basic consumer goods (grocery, convenience stores, gas stations)	339 (44.5)	247 (42.4)	92 (51.4)	4.45	1	.035
Public transportation	186 (24.0)	129 (22.2)	54 (30.2)	4.80	1	.028
Healthy residents	136 (17.9)	95 (16.3)	41 (22.9)	4.04	1	.044

In contrast to Florida (2002), who listed tolerance as important migration factors, our findings do reflect a different set of community features desirable by graduating seniors. In Glaeser's (2004) review of Florida's work, he acknowledged that Florida is not the first to make a connection between a bohemian lifestyle and creative occupations, and where such people choose to live. However, he complimented and supported Florida's contention that to thrive, communities need to attract creative people. Glaeser further noted that it is an overstatement to suggest that all creative class people adhere to the bohemian lifestyle, where richness of racial, ethnic, and gender identity in a community is an important feature. This view is verified in the present study; racial diversity of the community and gay and lesbian population of the community were ranked 27th and last (37th), respectively, in importance for graduating seniors. This may indeed suggest a unique profile for college-educated individuals from rural versus urban areas.

Rural states such as Iowa are in great need of attracting and bolstering their human capital. Results of this study provide valuable insight for economic development regarding what community features may aid in attracting and retaining young college-educated individuals, a rich source of human capital. Younger individuals may be attracted to rural communities by employment opportunities and a low cost of living, but also a safe living environment and natural/recreational amenities that offer the quality of life they seek. Our results also highlight some new findings concerning desirable community features, showing access

to basic consumer goods and health facilities as important. Having access to restaurants, shopping, and quality education also surfaced as features of importance in this study. While these factors may not be primary reasons to relocate, our findings suggest that the presence (versus absence) of these features may, in aggregate, create a tipping point that affects the migration decisions of graduating seniors and the stock of human capital available to build communities of all sizes.

### Policy Implications

Because many rural regions of the United States have been hit hard by brain drain, it is a major concern for policy makers focused on rural America (Artz, 2003; Artz & Yu, 2011; Gibbs, 2006; Mills & Hazarika, 2001). Policy makers need to find ways to help reduce the brain drain from nonmetropolitan areas and make it more attractive to live in small rural locations in mid-America. There have been a number of policies established to make nonmetropolitan areas more desirable (Winters, 2011); however, this is not a "one-size-fits-all" approach, and policy solutions need to be proposed and implemented appropriately.

Florida's work (2002; Florida et al., 2006) indicated tolerance toward racial/ethnic and sexual orientation as highly important to migration decisions. The present study found that these tolerance-related features were ranked 27th and 37th (last), respectively, reflecting a unique set of features important to migration decisions for Iowa's state

university graduating seniors. In the present study, economic features and selected lifestyle features (i.e., cost of living, strong economy, safety, access to basic goods) were most important to these graduating seniors. Our findings are also supported by McGranahan and Wojan (2007), who suggested that younger individuals are attracted to rural communities by amenities that offer the quality of life they seek (e.g., safety, healthy environment, access to basic goods).

Results of the present study provide targeted guidance to stakeholders aiming to attract and keep college graduates in an effort to bolster human capital and economic development. State and local governments, universities, employers, and economic development agencies all have roles in creating and implementing policies that expand desired community features. Cost of living and a strong economy were the most important community features to our sample of graduating seniors. As such, effective economic development policies may include targeting employers offering more competitive salaries and benefits to locate in the state, and supporting partnerships between local businesses and institutions of higher education that “fast track” skilled employees for these businesses to remain competitive. Aligned with Florida et al.’s (2006) position on the important role of institutes of higher education to attracting human capital and creating a strong economy, results of the current study indicate the attractiveness of education-related features (Ranks 6, 9, 11) to the graduating seniors. Therefore, effective policies may include student loan forgiveness programs, increased access to higher education (i.e., satellite campuses/online learning), and increased support for quality K-12 education. Furthermore, policies aimed at increasing tourism may also be advantageous for attracting college graduates. The addition of restaurants and bars, events and attractions, and recreational amenities, especially those that make the most of, yet still, protect natural resources (Ranks 6, 8, 13, 14, 20, 21), may attract both tourists and college graduates.

### *Implications for Marketing and Economic Development in Iowa*

Findings from this study have important implications for rural development in Iowa and other states experiencing the impact of brain drain. Within the United States, Iowa has experienced the second-highest brain drain rate of young college-educated adults (Iowa Department of Economic Development, 2007). In the present study, cost of living and strength of the local economy were ranked as primary factors in migration decisions for graduating seniors. Compared with other states of interest to our sample, Iowa reported the second lowest cost of living (Missouri Economic Research and Information Center, 2011) and a lower unemployment rate (5.7%; U.S. Department of Labor, 2011). To combat brain drain, Iowa should focus on

and actively promote these advantages that may attract young professionals.

A review of a primary Iowa Economic Development website (2011) revealed that only a peripheral reference to family benefits of state residency, and much of the information appears to target those who are not current residents of Iowa. Although these marketing efforts tout many positive attributes of living in Iowa (e.g., simplicity, sense of community, authenticity, family focus), they do not necessarily address aspects of critical importance to graduating seniors. The marketing dimension of this website (Marketing Campaign, 2011) promotes Iowa as providing a balance between career, personal, and family goals, but it again does not target the younger demographic group. Incorporating tangible evidence of important economic and lifestyle factors that are present in Iowa communities may make state and community marketing efforts more relevant and yield more positive outcomes in terms of stemming brain drain and enhancing human capital.

Christian Fong (2010), a founding member of Generation Iowa, a state-level commission studying why the next generation is leaving Iowa, maintained that young people are first and foremost looking for affordability, availability of jobs, a competitive salary, and the possibility of advancement. This suggests that for the reduction of brain drain and long-term economic development to occur, job-related issues must first be addressed for graduating seniors in Iowa. If this requirement is met, results of this study suggest that graduating seniors may indeed choose a location based on closeness to family and other life-quality attributes associated with their home state. These findings have immediate practical implications for marketing and economic development strategies in Iowa, as the state has one of the highest levels of brain drain nationally. It is projected to see a 13.8% decrease in 18- to 24-year-olds through the year 2025 (Iowa Department of Economic Development, 2007).

Safety also appears to be a critically important factor in terms of location decisions for young people, yet it is rarely addressed in state marketing materials. A review of marketing efforts in Iowa only provides indirect reference (e.g., crime rate) to Iowa’s safety in a 50-state comparison (Marketing Campaign, 2011). Results of this study suggest that safety could be a factor to be more directly emphasized as a valuable location attribute in marketing efforts aimed at attracting college graduates.

Small business start-ups and entrepreneurial ventures have become popular rural development strategies (Artz & Yu, 2011). Most businesses in rural communities are smaller enterprises of 500 or fewer employees. Therefore, efforts such as the Iowa Economic Development Authority, which is leading the way in policy implementation and focuses on growing start-up companies and helping existing companies to develop more innovative business strategies,

may decrease brain drain. The primary goal of their policy-driven programming is to retain and attract companies that create jobs in Iowa (Iowa Economic Development, 2013). Such efforts in job creation may be a viable strategy for rural areas to attract graduates and fuel local economies.

### Limitations and Future Research

This study sheds additional light on issues that drive the brain drain of college graduates from rural states such as Iowa, but it does have a few limitations. First, the community features were not presented in a random order to each participant in the online survey instrument/interactive tool, which may have had an impact on the items selected by participants. Also, the interactive tool was designed to not only collect data for academic and community leader use but also to promote rural communities in Iowa. Both these factors may therefore be viewed as potential limitations. Finally, using graduating seniors from public universities in one state only in the present study limits the generalizability of findings to all college graduates, and a primarily female sample (69%) may have presented some gender bias. Potential consequences of having mostly female respondents may be one of the reasons why safety, access to health facilities, and education quality ranked so high.

The present study was conducted during a period of economic downturn and in a primarily rural state. Further work is needed to determine the relative strength of factors that drive the migration decisions of college graduates in rural areas, and if these factors are indeed different from those for individuals from more urban states, or during periods of economic prosperity. Future research may also examine features other than place and economics that may affect migration. Home state of high school education may additionally influence whether the college graduate will stay or leave. If college graduates attended high school in another state, they may be more likely to leave after graduating from college (Kodrzycki, 2001; Wirtz, 2003). Therefore, future research on rural migration should explore whether differences in reasons for choice of location exist for the two groups of stayers (those who attended high school in the same or a different state). Most brain drain studies have looked at recent college graduates (Artz, 2003). A longitudinal study that addresses migration decisions of workers in different life stages may be fruitful. In addition, current macroeconomic factors, such as a 9.1% unemployment rate for recent college graduates, which was the highest annual rate on record (The Institute for College Access & Success, 2011), may have affected rankings of community features for the sample in this study. Thus, ongoing data collection from future cohorts of graduates is planned.

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