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The cost of replacing South Carolina high school principals

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Abstract
The purpose of this study is to examine the costs of replacing high school principals. The technique for cost estimation used is the 'ingredients method' and is based on the economic principle of opportunity cost. It is *the* recommended form of cost analysis by experts in the field. Within this study, the ingredients method systematically identifies all the resources required to replace high school principals, and attaches prices to each of those ingredients. The systematic nature of the method allows for costs to be measured and compared across studies. Data were obtained from executive-level human resource management across six South Carolina public school districts. Costs of high school replacement varied by district (ranging from $10,413.03 to $51,659.27), with the sample average equating to $23,974.29. The methodology used in this study can be replicated across the globe to estimate the cost of replacing school leaders.

Keywords
ingredients method, principal replacement, principal replacement cost, principal turnover, teacher shortage

While the teacher shortage problem has received much attention (Donitsa-Schmidt and Zuzovsky, 2016; Ingersoll, 2012), in recent years the international principal supply crisis has intensified (Krüger et al., 2005; Pijanowski et al., 2009; Tran, 2016). In England, the National Governors' Association (2015) found that 43 percent of survey-responding governors reported difficulty finding quality school leader candidates. Moreover, half the school leaders in London were found to be 50 years old or above and rapidly approaching retirement (Tretheway and Kempton, 2015). Similarly, in the United States, the US Department of Labor (2016) forecasts a 6 percent increase of new principal jobs until 2024 based on student enrollment projections; however, this need is exacerbated by rising principal turnover (Beteille et al., 2012; Papa, 2007).

The topic of principal turnover warrants attention given that principals' impact on schools is negatively influenced by turnover. One reason is that the estimated time for substantive school reform requires about five to seven years (Fullan, 2001; Mascall and Leithwood, 2010), yet half of new principals have been found to leave their position by their third year (School Leaders Network, 2014; Whalstrom et al., 2010), stymying the full potential of any reform efforts they may have initiated.

Although the negative impact of principal turnover on student outcomes has been well documented (Beteille et al., 2012; Mascall and Leithwood, 2010), less understood are the financial implications of principal turnover. When principals leave their positions, school districts incur replacement expenses. Benner elaborates, noting that 'the expense associated with . . . turnover represents a cost to public education beyond the typical expenses associated with operating schools. These turnover costs result in a loss of resources to the education system that could otherwise be used to improve the effectiveness of instruction' (Benner, 2000: 1). This theory of opportunity cost serves as a framework for our study, which asks: 'What are the costs associated with replacing high school principals in the state of South Carolina?'

We restrict our study to a single state in the United States to control for interstate variation (e.g. in cost, labor supply) and to bound the study to provide sufficient depth to our understanding of principal replacement. We also restrict our study to only high school principal replacement because of differences in pay (i.e. high school principals earn more than

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other types of principals) (Tran, 2015) and differences in turnover rates (e.g. high school principal turnover at a higher rate than primary school principals) (Gates et al., 2006).

Literature

Principal turnover crisis

Whitaker (2003) conducted an international comparative analysis across Australia, England, Ireland, New Zealand and the United States, and found that the role of the high school principal has changed globally. These changes include increased accountability and authority, tension between administration and leadership, collaborative relationships with the community, and school choice (requiring principals to promote and market their schools), which translated to the lack of interest in the principal position and growing turnover due to the increased time demands of the job and scrutiny associated with the position (Grissom et al., 2015; National Association of Elementary and Secondary Principals, 2008; Norton, 2003). Relatedly, Robbins (2013) notes that school leaders in the UK are not prepared to handle the stress associated with school leadership, which often results in high turnover. The degree of influence a principal has in setting performance standards, curriculum and school climate has also been found to be associated with the likelihood of principal turnover (Boyce and Bowers, 2016). Consequently, principal turnover is often a regularly occurring phenomenon across the world. In the United States, for instance, principals are replaced every three to five years (Fuller and Young, 2009; Whalstrom et al., 2010).

Frequent principal turnover has been found to be detrimental to school outcomes. For instance, Beteille et al. (2012) found that frequent principal turnover is negatively related to school achievement gains and positively related to teacher turnover. These relationships are magnified for low-achieving/high-poverty schools. Mascall and Leithwood (2010) similarly found that frequent principal turnover negatively impacts school culture, which is the mechanism by which principals facilitate improvement in student achievement (MacNeil et al., 2007). Although the negative academic impacts of frequent principal turnover have been documented, the financial implications of principal replacement warrant further research. The next section will provide the contextual background to situate our study by reviewing the literature on educator turnover cost.

Educator replacement costs

Annually, approximately half a million departing teachers costs the United States roughly $2.2 billion to replace (Alliance for Excellence in Education, 2014). Barnes et al. (2007) examined teacher replacement cost in five school districts and found that more turnover existed at high-minority and poverty/low-performing districts, which meant that these districts repeatedly incurred teacher replacement costs that could have been spent elsewhere. Although the average reported teacher replacement cost was found to be $8,371, cost varied by size, ranging from $4,366 for a smaller rural district in New Mexico to $17,872 for the large urban Chicago district. Data were provided by the districts whose systems were unable to provide all information needed for accurate cost estimation because many of the required expense data are not collected. Moreover, district information was incomparable because a uniform methodology in expenditure data collection was not used.

Milanowski and Odden (2014) examined the cost of teacher replacement at a large Midwestern urban district. Employing approximately 6,000 teachers, the district replaced an average of 550 teachers over the previous five years. Cost data were collected from the district and school level in the form of dollars and time spent on activities. The authors provide low, middle and high estimates of the teacher turnover cost for the district at $6,766, $13,969, and $33,403, respectively.

Shockley et al. (2006) examined the costs of teacher replacement in two Florida school districts, estimating the costs to be $6,631 in the smaller district and $12,652 in the larger one. The school year budgets were used to estimate costs. Interestingly, the district with lower turnover had a higher per teacher replacement cost. The authors speculate this may be because the district had spent a significant investment and commitment on a teacher induction system, which resulted in higher costs per teacher replacement.

Although several studies have examined the topic of teacher replacement costs, the topic of principal replacement costs has largely escaped scholarly literature. Some work on the topic was addressed by the Schools Leaders Network (2014) report, which suggested that the average principal replacement cost amounts to $75,000 per principal. Unfortunately, the methodology used to derive this figure is not entirely clear. Some cost components appear to have been obtained from other published reports. Consequently, insufficient information is provided in the report for those who wish to replicate the calculations for specific districts.

We aim to build on these weaknesses by being very clear and specific about methodology used in our study. The detail that we provide will enable replication of our work in other locales and districts across the globe.

Theory

The cost estimation technique used in this study is based on the economic theory of opportunity cost which directly accounts for 'the value of what was sacrificed by using a specific resource in one way rather than in its best alternative use' (Levin and Belfield, 2015: 403). Within this study's context, money spent on replacing principals reduces dollars for instructional services (e.g. tutoring services). One major advantage of framing cost estimations this way is that it 'provides a strong theoretical background and consistency across applications . . . ' (Levin and Belfield, 2015: 403). Within our cost estimation approach, the opportunity cost of the ingredients is measured by market price values.

Method

The technique for cost estimation used within this study is known as the 'ingredients method'. It is not only well-

Table 1. Districts' demographic information.

	District B	District C	District D	District F	District H	District I
Geographic locale[a]	MNU	MU	MCU	MNU	MNU	MU
Percent of students on free/reduced lunches, SNAP, TANF, or Medicaid	82.3%	54%	68.9%	62.9%	39.4%	42.1%
Enrollment	3,136	27,286	1,717	5,102	7,088	16,749
District 4 year cohort graduation rate	77.9%	84.2%	86.1%	89%	90.0%	90.0%
Average SAT critical reading score	430	472	456	494	503	511
Average SAT math score	439	470	448	496	505	522
Average SAT writing score	412	451	443	482	479	485
Dollars spent per pupil	$9,780	$10,568	$9,109	$9,492	$11,053	$11,410
Average administrator salary	$77,838	$92,967	$75,955	$83,428	$86,820	$91,190
Number of high schools in the district	1	6	1	2	2	5
Principals who voluntarily left their school[b]	0	5	7	2	1	5
Principals who stayed within the district after departing[b]	–	3	4	1	1	0
Principals who retired[b]	–	2	2	0	0	3
Principals who were involuntarily removed from their position[b]	–	0	1	0	0	0
Average number of months required to replace a high school principal[b]	3	1	2	3	2	3
Average number of years that principals lead the same high schools within your district[b]	5	5	4	5	3	5

[a]MU: Metropolitan, urban; MNU: Metropolitan, not urban; MCU: Micropolitan, urban;
'–' Not reported
[b]Principal turnover statistics are based on the previous five years

established (Belfield et al., 2015) but is *the* recommended form of cost analysis by experts in the field (Hollands et al., 2014; Levin and McEwan, 2001). The ingredients method systematically identifies all the resources required to implement a particular endeavor, in this case, high school principal replacement, and subsequently attaches prices to each of the resources. The systematic nature of the method allows for costs to be measured and compared across studies (Levin and Belfield, 2015). Costs are treated as incremental, meaning that they are above and beyond what would normally occur without the principal replacement activities.

All costs are estimated in 2016 dollars and adjusted based on each district's core based statistical areas (region) as identified by the United States Office of Management and Budget (USOMB). Each region represents areas with a 'high degree of economic and social integration' (USOMB, 2013). The standardization of costs by time is appropriate because time-related factors may influence costs, such as inflation. The adjustments of prices by region is appropriate because costs can vary by locale, with some locations having higher-price ingredients than others.

A systematic method of cost estimation is critical because costs are often not included in evaluation research or, when included, the exact method of deriving the cost information is either unknown or based entirely on budgets from the business office (Levin and Belfield, 2015; Levin and McEwan, 2001). Information from budgets is often from a budgeting process known as line-item budgeting, which does not itemize ingredients in a way that clearly identifies the amount spent on any given program. For instance, salaries of employees are usually reported in totality, as opposed to being apportioned out by activity. In addition, budgets do not adjust dollars to account for regional price differences. Consequently, '[t]he ingredients method is strongly preferred over reliance on budgets (and very strongly preferred over reliance on statements from program deliverers)' (Belfield et al., 2015: 17).

Because the ingredients method requires that the details of districts' principal replacement process be understood, we provided in-depth surveys to executive-level human resource (HR) management (i.e. Assistant Superintendent or Director of Personnel/HR) across six South Carolina public school districts. The survey contained multiple choice as well as open-ended questions to capture both the quantity and quality of the ingredients. For instance, a district may involve five individuals in the principal selection panel, but depending on who those five individuals are, the cost implications would vary. The detailed survey enabled us to obtain rich data to thoroughly understand each district's principal replacement process.

Whereas traditional quantitative research typically depends on larger sample sizes for breadth, this study emphasizes depth. Specifically, the aim is to sufficiently detail the principal replacement process for a handful of districts to price all relevant ingredients. Districts are identified by pseudonyms to protect confidentiality. Their descriptive demographic information can be found in Table 1, suggesting much variety across the sample's districts, which improves the selected districts' general representativeness. For instance, beyond differences in geographic region, districts' student poverty levels (i.e. percentage of students on free/reduced lunches, SNAP, TANF, or Medicaid) ranged from 39.4 percent to 82.3 percent, and enrollment ranged from 1,717 to over 27,000 students. Across the six school districts, the average duration that a principal leads the same high school within the district is four and a half years. This may be problematic

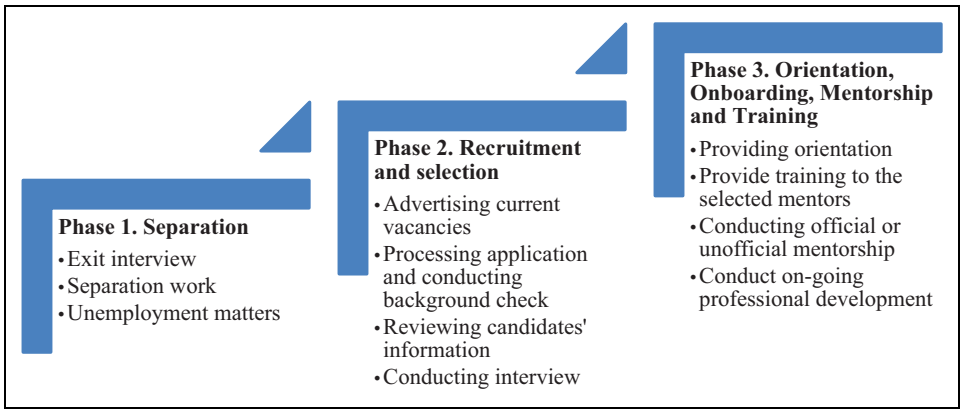

Figure 1. Principal replacement process.

because research has suggested that it takes about five to seven years for principals to put a vision in place for substantive school reform to improve school performance (Fullan, 2001; Mascall and Leithwood, 2010). All but one principal who left their positions in the last five years resigned or retired. Districts spend approximately 2.33 months, on average, to replace a high school principal.

The principal replacement process ingredients are grouped based on major cost areas. The personnel costs refer to human resources costs. Materials, equipment and supplement funds refer to non-personnel costs such as professional development or nameplate purchase. Finally, facilities refer to the physical spaces that are used throughout the principal replacement process. It is important to note that because the ingredients method of cost analysis operates on the theory of opportunity costs, costs must be priced out even for facilities that are currently owned by the school district, based on the idea that if the school district had not used the facility for its principal replacement endeavors (e.g. interviewing candidates), the space could have then been used differently (e.g. renting out a room to the public).

The aforementioned groupings were further delineated by phases within the replacement process. Personnel, materials, equipment and supplement funds and facility costs can incur during each phase of the principal replacement process, which includes (a) separation of the previous principal (i.e. processing termination), (b) recruitment/selection of the incoming principal, and (c) the new principal's orientation, onboarding, mentorship, and training. These phases were derived from the teacher turnover cost analysis literature (Texas State Board of Educator Certification, 2000; Watlington et al., 2010).

As seen in Figure 1, every phase is associated with a host of activities that each require a certain number of personnel and time commitment. Participants were asked to indicate the number of personnel and hours invested by each person for each activity. We also requested information regarding the type of personnel from a list that included chief administrative officer, executive director of human resources, human resource specialist, administrative assistant, director of classified personnel, director of teacher quality, recruiter, benefits specialist, teachers, principals and 'other' for each step of the process.

Prices were tabulated in Hollands et al.'s (2015) online *CostOut* Cost Tool Kit. The sum of all ingredients multiplied by their unit price represents the total cost of principal replacement. Numerous independent market sources were consulted for the personnel ingredient prices. For instance, most personnel were priced by market average values that account for each position's salary and fringe benefit,[1] from sources such as the US Department of Education, Bureau of Labor Statistics (2016a, b) and the National Center for Education Statistics (2014). Facility prices were based on market values of education buildings from school construction publications such as *School Planning and Management* and *The School Construction Report*. Education facility rates were amortized over 44 years, which is the average education buildings lifespan per the US Department of Education (Alexander and Lewis, 2014).

Results

Personnel resources

On average, 37 personnel members were needed to work 207.42 hours to terminate and replace a departing principal. The number of personnel needed ranged from 21 to 56, and committed hours ranged from 124.5 to 421. At the upper end, District D reported the use of a high number of personnel ($n = 56$) and working hours ($n = 421$) in the process, but also had the most principal turnover ($n = 7$) among the six school districts over the past five years. For principal replacement, the provision of mentorship, both official and unofficial, was reported to be the most personnel-intensive activity, with an average of six people working 78.4 hours across districts.

Non-personnel resources

School districts were also asked to report any additional resources beyond personnel that were required for the process, including new hire supplies, equipment, facility usage, and supplement funds.

Supplies. When a principal begins at a new school, there are office and equipment supplies that must be provided and/or replaced. Business cards appear to be ordered for most new administrators across the sample districts ($n = 4$). The

average number of business cards ordered is 550 (ranging 200 to 1,000). Districts B, C, and F reported that 500–1000 pages of letterheads were ordered for new high school principals. In addition, most districts ($n = 4$) also reported ordering door nameplates. District B further indicated that directories are updated, and District C noted that identification cards are made.

Equipment. School districts were asked to provide a list of the equipment provided to a new high school principal, if not reused from the previous principal. Computers are replaced for principals in four of the school districts. Laptops are replaced for principals in three school districts. Tablets are replaced in four of the school districts, and cellular phones are provided/replaced in five of the six school districts. Resources did not vary by region.

Facility usage. As mentioned earlier, the ingredients method explicitly accounts for facility use. Utilized room sizes ranged from 100 to 900 square feet for the entire process. Broken down by phases, districts reported the most space ($M = 487.5$, SD = 301.04) was used during orientation.

Additional funds. All school districts indicated that they provided funds for professional network fees ($M = \$269$, SD = 143.81). Only district F provided a stipend ($500) to new principals for professional development, whereas District C (the sole metropolitan, urban school district in the sample) was the only district that provided a stipend ($2,000) for principal mentors and conference attendance funds. Overall, districts significantly ranged in their supplemental principal investments from $150 to $4,250.

Cost of principal replacement

After the quality and quantity of district hiring ingredients have been identified, market prices are attached to each ingredient to estimate cost. Table 2 shows each district's percentage of their total costs by specific ingredients.

As can be seen, as districts vary with the number and type of ingredients used, so do cost shares. For instance, District I has the highest percentage of its total costs allocated towards superintendents (the highest paid district personnel), and appropriately is the district that has the largest principal replacement cost. The total annual principal replacement costs for each district can be seen in Figure 2. In contrast with examining the cost percentage of each ingredient, Table 3 displays each district's cost percentage and dollar amounts by ingredient type categories. Typical of education, the bulk of the resources are spent on personnel.

By interpreting the information from Tables 1 and 3 in tandem, it is apparent that districts located in Metropolitan urban regions have the highest replacement costs as compared to other districts. Specifically, these districts are District I and C, the two with the highest enrollment and average administrative salaries, and the most high schools among all the sample districts. This suggests principal replacement may cost more in larger districts that spend more on administrative salaries.

The average costs of high school principal replacement in the sample districts is $23,974.29. The next question to ask is whether those districts that have high-cost principal replacement activities see a return on investment in terms of principal retention. Although our study cannot conclusively answer that question, within our sample, the total principal replacement costs and average number of years a principal leads the same high school within the district were moderately correlated ($r = .61$).

Sensitivity analysis

One key distinction between this study and the Schools Leader Network study (2014) is that this study incorporated the costs of facilities and employee separation, whereas their study did not. Their study did, however, include the cost of principal preparation programs, which this study intentionally did not include. Principal preparation programs are often heavily funded by philanthropy and created with partnerships from universities and nonprofit organizations. Given that these types of programs were not present in the principal replacement process for our sample districts, they were not included. However, based on the cost estimates provided by the School Leaders Network and after adjustment for the regional cost based on the consumer price index, districts could expect to add another $36,200 to their total costs if they included such a program.

By including this amount, the average cost of principal replacement for the districts increases to $60,174.29. This figure is relatively close to the School Leaders Network's (2014) $75,000 estimate, especially after considering that region adjustments were made to our cost estimates. Specifically, this study focused on the state of South Carolina, which has a lower cost of living than most other states (USOMB, 2013) and an associated lower salary offering for positions, which would influence cost.

Furthermore, because ingredients of the principal replacement process and their costs are specified, it is possible to conduct sensitivity analyses to determine how values would change if we used different price inputs. For instance, although we valued fringe benefits at 49 percent in accordance with data from the BLS, some may view this as a conservative estimate. Richwine and Biggs (2011) argue that teachers' benefits should actually equate to 100.8 percent of wages because, in addition to other undervalued benefits, the BLS does not include retiree healthcare. Based on this value of the estimate of fringe benefit for personnel, the new average total cost of principal replacement in our sample would amount to $31,301.25, ranging from $13,304.27 to $68,043.86. As can be seen, if there exists disagreement with any of the selected market price values used, all one has to do is substitute the values.

Discussion

The goal of this study was to estimate the costs of replacing high school principals. Using the ingredients method, the

Table 2. Districts' percentage of total costs by ingredients.

Category	Ingredient	District B's percent of total cost	District C's percent of total cost	District D's percent of total cost	District F's percent of total cost	District H's percent of total cost	District I's percent of total cost
Personnel							
	Superintendent	18.5%	7.3%	6.9%	0.00%	17.3%	19.3%
	Assistant Superintendent	37.5%	13.5%	25.9%	0.00%	0.00%	18.1%
	Principals	0.00%	16.7%	0.39%	0.00%	36.4%	8.0%
	Chief Administrative Officer	14.8%	13.0%	6.4%	35.5%	18.8%	12.5%
	Director of Human Resources	8.5%	6.0%	11.1%	34.7%	20.0%	3.2%
	Human Resource Specialist	0.00%	0.50%	0.00%	0.00%	0.20%	0.50%
	Administrative Assistant	2.00%	0.70%	3.60%	3.00%	0.10%	1.10%
	Director of Classified Personnel	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Director of Technology	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Recruiter	0.00%	0.70%	1.50%	0.00%	0.00%	0.10%
	Benefits Specialist	1.20%	0.80%	1.30%	1.10%	0.40%	0.09%
	Instructional Coordinator	0.00%	0.00%	0.00%	0.00%	0.00%	17.1%
	Chief Instructional Officer	0.00%	0.00%	0.00%	0.00%	0.00%	12.5%
	Director of Teacher Quality	3.0%	4.20%	0.00%	0.00%	0.00%	3.1%
	Teacher	0.0%	0.0%	27.9%	0.0%	0.0%	0.00%
	Director of Instruction	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Retiree Principal	0.00%	8.40%	4.3%	0.00%	0.00%	0.00%
	Information Technology Specialists	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Staff Personnel Services Administrator	0.00%	0.00%	0.00%	0.00%	0.00%	7.50%
	Pay Clerk	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Materials, equipment and supplement funds							
	Tablet	1.7%	1.50%	1.60%	0.00%	0.00%	0.70%
	Mobile phone	2.7%	2.40%	2.50%	5.8%	0.00%	1.2%
	Letterheads (per thousand)	0.90%	0.20%	0.00%	1.0%	0.00%	0.00%
	Desktop computer	1.60%	0.00%	1.5%	3.4%	0.00%	0.70%
	Business cards	0.04%	0.013%	0.00%	0.2%	0.1%	0.00%
	Identification card	0.00%	0.03%	0.00%	0.00%	0.00%	0.00%
	Mentor stipend	0.00%	11.20%	0.00%	0.00%	0.00%	0.00%
	Professional conferences	0.00%	7.5%	0.00%	0.00%	0.00%	0.00%
	Door nameplate	0.00%	.10%	0.01%	0.01%	0.1%	0.00%
	Laptop	0.00%	0.00%	1.2%	0.00%	2.6%	0.60%
	Professional network membership fees	1.2%	0.9%	0.58%	4.4%	1.3%	0.00%
Facilities							
	Exit interview office	0.1%	0.7%	0.3%	0.2%	0.04%	0.1%
	Advertising office	0.2%	0.3%	0.4%	0.1%	0.21%	0.3%
	Employment interview office	0.4%	0.3%	0.4%	0.2%	0.37%	0.4%
	Orientation room	2.9%	1.6%	1.1%	2.6%	1.5%	2.6%
	Mentoring and training room	2.9%	1.6%	1.1%	2.3%	0.43%	2.3%

Notes: Percentages may not equal 100 due to rounding. Because some data concerning facility space were missing for Districts F and I, missing data were imputed by the average facility space for all the sample districts.

study's results suggest that high school principal replacement is an expensive activity for public school districts in South Carolina. Specifically, the total replacement cost was an average of $23,974.29 per principal, ranging from a low of $10,413.03 to a high of $51,659.27. As expected, given the involvement of higher earners in the principal replacement process (e.g. superintendents) relative to those involved in teacher replacement, the cost of replacing a principal is typically higher than replacing a teacher. For instance, teacher replacement costs have been found to range from a low of $4,366 to a high of $33,403 (Barnes, et al., 2007; Milanowski and Odden, 2014; Shockley et al., 2006). In sum, a district with frequent principal turnover will experience high principal replacement costs, which can be draining for district finances.

When interpreted with findings from past studies, there are several important implications of this study for educational managers at the school district level. First, past study findings have considered salary as one of the key underlying factors for principal retention (Tran, 2017; Tran and Buckman, 2017). Tran (2017) found that California high school principals' degree of satisfaction with pay was

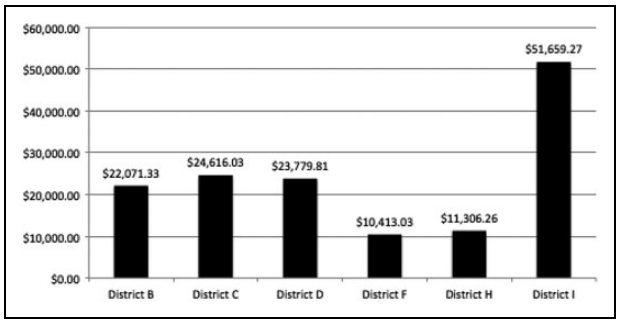

Figure 2. Total annual principal replacement cost by district.

negatively related to their desires to leave their jobs. This satisfaction was influenced by the pay of relevant others (e.g. other high school principals in different school districts). Similarly, Tran and Buckman (2017) examined the relationship between high school principals' movement and salaries in Wisconsin with three years of data. They found that principals who moved to leadership positions in other districts earned higher salaries than those who did not move. Taken together, these studies suggest that salary likely matters for principal retention.

Consequently, raising principal salary is likely a cost-effective solution to counter the costs incurred from principal replacement in school districts, such as in South Carolina. Although districts may indicate they do not have the financial resources to increase principal pay, districts may already be paying more merely to continuously fill the position. This conclusion is in line with findings of other studies on teacher replacement. Barnes et al. (2007) argued that Chicago public schools' teacher replacement of $17,872 could more cost-effectively be spent on teacher retention initiatives like a high-quality induction program, which would cost $6,000 per teacher. Given that teacher replacement costs the district over $86 million a year, this would still save the district millions.

Relatedly, instead of paying the high cost of constant principal replacement, which in our sample occurred quite frequently, school districts may benefit from spending the money on more cost-efficient endeavors, such as principal retention efforts. Beyond addressing salaries, several other factors warrant attention given their potential influence on principal retention. Farley-Ripple et al. (2012a) theorize that there are factors that 'push' and 'pull' principals away from and towards the position. Pull factors include salary but also benefits, opportunities, and challenges, whereas push factors include politics, interpersonal conflict, poor working relationships, and personal and family issues. Consideration of the costs and effectiveness of targeting these various factors for retention efforts could help districts reduce principal turnover for the lowest cost. For instance, to address working and personal issues and their impact on principal retention, stress management training may be provided in order to help school leaders better understand work–life balance and well-being. Cost of implementation would likely be offset by increased principal retention (Robbins, 2013).

It is worth noting that research has suggested that different types of principals may leave for different reasons. For instance, Boyce and Bower (2016) distinguished between different types of principals who exited schools, namely those satisfied with their job and those dissatisfied, and found different traits associated with the two types of principals. For example, principals who were satisfied with their job were often more satisfied with their pay, and dissatisfied principals were more likely to leave the position for a non-principal job. Given these differences, it is essential to adopt, personalize, and implement effective retention plans (Norton, 2003) and consider their respective costs.

Concern for costs is particularly critical in the area of education finance. Effective budgeting takes into consideration a balance of both expenditures and revenue. Even in times of revenue growth, districts often find themselves operating in deficit because of more rapidly growing costs. As revenue growth slows or, even worse, declines, the problems exacerbate. Economically harsh times, pent-up staffing and salary needs, in addition to ever-increasing pension and other liability costs, all work together to create major problems for district budgeting. Reduction of ever-increasing costs is imperative for districts to operate efficiently and to sustain operations. Bringing awareness to the high cost of principal replacement and finding ways to mitigate the need for constant replacement can help with this and increase districts' purchasing power, freeing up resources to be directed toward other efforts (e.g. instruction).

The key strength of this study is shown in its methodology. Our study provides a useful guideline to replicate the cost analysis of principal replacement in districts globally. This is especially critical because many 'districts do not readily track or share the specific costs they incur to hire and onboard principal replacements' (School Leaders Network, 2014: 4). Although our study focused specifically on the cost of replacing high school principals in South Carolina, the methodology we used is general enough to be applied anywhere. Being more knowledgeable and transparent about principal replacement cost will bring awareness to the need to find more cost-effective solutions to the principal labor problem. Any resources saved on replacing principals have the potential to benefit students in other ways.

This study, like all studies, has its limitations. Farley-Ripple et al. (2012b) noted that researchers should delineate if a study uses a dynamic or static approach. Dynamic approaches are longitudinal or long-term, and static approaches are short-term and only focus on a single moment in time. One of the limitations of this study is that, like Barnes et al.'s (2007) study, we only looked at one year of data, which represents a static snapshot in time. While we did ask survey respondents to reflect on trends of the past several years (e.g. turnover rate for the previous five years), future studies would benefit from collecting multi-year data.

Secondly, our data are based upon participant responses which have inherit benefits but also limitations. For instance, although respondents may be extremely

Table 3. Districts' percentage of total by ingredient type.

Ingredient	District B's percentage of total cost	District C's percentage of total cost	District D's percentage of total cost	District F's percentage of total cost	District H's percentage of total cost	District I's percentage of total cost
Personnel	$18,839.58 (85.4%)	$20,387.07 (82.8%)	$21,228.92 (89.3%)	$8,316.45 (79.9%)	$10,551.18 (93.3%)	$47,129.55 (91.2%)
Materials, equipment and supplement funds	$1,800.38 (8.16%)	$3,117.39 (12.66%)	$1,765.61 (7.42%)	$1,540.06 (14.80%)	$466.52 (4.13%)	$1,614.40 (3.13%)
Facilities	$1,431.37 (6.5%)	$1,111.57 (4.5%)	$785.28 (3.3%)	$460.54 (4.4%)	$288.56 (2.6%)	$2,915.32 (5.6%)

knowledgeable about the principal replacement process, they may not be fully aware of all the less noticeable activities performed by others, which would underestimate costs. Thirdly, while we discussed the issue of principal retention, other outcomes could also be assessed. For instance, an interesting question would be: 'What might be the cost differences between schools that hire effective principals as compared to those that do not?'

Fourthly, our discussion focused heavily on principals who leave voluntarily, given that in our sample all but one principal voluntarily resigned or retired. However, it is important to note that the principal turnover crisis is not entirely driven by voluntary principal exits. As evidenced by Farley-Ripple et al., personnel changes and moves may be district initiated; in their study, the majority of career decisions were found to be influenced by 'recruiting/tapping, requesting, reassigning, passing over, and removing' (Farley-Ripple et al., 2012a: 792). Districts should examine the frequency and reasons for their involuntary principal turnovers, and consideration should be made concerning whether or not it is cost-effective for districts to do so, and whether such movement is incurring unnecessary cost. Finally, because we opted to focus on depth vs. breadth, the sites we selected may not be statistically representative of the population, although variation in the type of schools selected did improve representativeness.

In conclusion, by using the innovative ingredient method, this study reflects the costs of replacing high school principals in South Carolina. The results which indicated relatively high costs of high school principal replacement across school districts in South Carolina call for further investigation on the topic. As our study was more likely a preliminary study conducted with a few school districts in South Carolina, we recommend further studies using the same methods on a larger scale and in different settings. Similar studies in the same school system in different states may contribute to a better understanding of the topic. In addition, determining the cost of retention efforts as compared to the cost of principal replacement may provide enlightening information.

Note

1. Forty-nine percent of each position's salary was added to determine their associated fringe benefits amount. This percentage was determined from data from the Bureau of Labor Statistics (2016b).

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