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Highlights

We identified four unique profiles of preservice teachers' motivations.

Perceived costs relative to other perceptions were a defining feature of profiles.

Prior experiences, social encouragement, and fallback career predicted profile membership.

Profile membership predicted career commitment, aspirations, and satisfaction.

Profile membership was related to race, gender, and certification status.

**Motivation Profiles of Urban Preservice Teachers: Relations to Socialization, Initial Career
Perceptions, and Demographics**

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Abstract

Given the perennial challenge of attracting and retaining high-quality teachers, especially in large cities, there is a need to understand why preservice teachers in urban districts choose a teaching career, their perceptions of the profession, and how these relate to their initial career commitments and aspirations. Using latent profile analysis, we examined patterns of motivational perceptions with variables from the Factors Influencing Teacher Choice model alongside perceived task effort cost, opportunity cost, and emotional cost of teaching within a diverse sample of 630 preservice teachers. We identified four distinct profiles that differentially related to theorized antecedents (prior teaching and learning experiences, social encouragement, fallback career) and outcomes (satisfaction, planned persistence, planned professional development, leadership aspirations). Race, gender and certification-level were distributed in unique patterns across profiles. Results provide a holistic perspective of preservice teacher motivations and indicate that perceived costs in relation to FIT Choice variables were a defining characteristic of motivational patterns.

Keywords: teacher motivation; costs; urban preservice teachers; expectancy-value theory; FIT Choice

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Motivation Profiles of Urban Preservice Teachers: Relations to Socialization, Initial Career Perceptions, and Demographics

In the United States, many districts struggle to attract and retain qualified teachers, especially in urban areas (Podolsky et al., 2016). Nationally, between 20-30% of new teachers leave the profession within their first five years, with figures for teachers in schools serving high-poverty communities over 50% higher (Sutcher et al., 2016). Adding to the challenge of teacher retention in urban areas is the fact that preservice teachers of color are less likely to complete teacher training programs and attain certification (US Department of Education, 2016). These patterns highlight a need to understand what motivates students in urban areas to become teachers, including what has attracted them to a teaching career, how they view the profession, and their initial career commitments and aspirations. The current study applies the Factors Influencing Teacher Career Choice model (FIT-Choice; Watt & Richardson, 2007) alongside perceived costs of a teaching career to understand the career motivations and perceptions of preservice teachers in a racially diverse urban sample. Using Latent Profile Analysis (LPA), we identified sub-groups who share similar motivational profiles, examined how profiles relate to theorized antecedents and outcomes, and investigated how demographic variables such as race and gender were represented across profiles.

Motivations to Teach

Teachers are drawn to their profession for multiple reasons (for a systemic review, see Fray & Gore, 2018). Common reasons include intrinsic enjoyment of working with children, a passion for an academic subject area, intellectual stimulation, and beliefs that teaching suits personal abilities (Kyriacou & Coulthard, 2000; Moran et al., 2001; Serow, 1993; Sinclair, 2008). Teachers are also typically motivated by the altruistic nature of the profession, including a

desire to help others and make a social contribution through their influence on children's lives (Allard et al., 1995; O'Brien & Schillaci, 2002; Serow et al., 1994; Sinclair, 2008). The profession also attracts teachers due to its practical features, such as ease of entry into the field, job security, geographic flexibility, and time for non-professional activities, such as raising a family and pursuing personal interests (Richardson & Watt, 2006; Serow, 1993; Serow et al., 1994; Yong, 1995). Teachers also attribute their career path to influential role models, positive prior teaching and learning experiences, and encouragement from family and friends (Allard et al., 1995; Richardson & Watt, 2006; Yong, 1995). Historically, teaching has been viewed as an accessible middle-class profession, despite the fact that in the US it is typically viewed as demanding and with relatively modest salaries and social status (Watt & Richardson, 2012). Perhaps less optimally, people sometimes choose a teaching career as a fallback option when their first career choice did not pan out (Moran et al., 2001; Watt & Richardson, 2007).

FIT-Choice Model

Watt and Richardson (2006, 2007) integrated many of the reasons why people choose a teaching career in their FIT-Choice model (Watt & Richardson, 2007). The model draws on expectancy-value theory (EVT; Eccles et al., 1983; Eccles & Wigfield, 2020), which posits that expectations for success and beliefs in the subjective task value of an endeavor are proximal psychological factors influencing career choice. According to EVT, expectancies and task values are shaped by a network of upstream personal, social, and cultural influences, such as gender and cultural stereotypes about occupations, beliefs and behaviors of socializers, and self-perceptions of individual aptitudes.

Following EVT, the FIT-Choice model categorizes motivations for a teaching career in terms of perceptions of the task, ability beliefs (i.e., expectancies), and subjective task values.

Perceptions of the profession include task demands (e.g., viewing teaching as a demanding career that requires expertise and training) and task returns (e.g., social status, salary, teacher morale). The model characterizes subjective task values into three groups: intrinsic career value, personal utility value, and social utility value. *Intrinsic value* refers to the inherent enjoyment of teaching. *Personal utility value* refers to perceptions that the career can be instrumental for reaching other personal goals, such as having time for family, job security, and geographic flexibility. *Social utility value* refers to perceptions that the career can be instrumental in serving others by enhancing social equity, making a social contribution, shaping the future of youth, and working with children and adolescents. An additional reason for becoming a teacher within the model is pursuing teaching as fallback career, which refers to choosing teaching because other career options did not work out. Watt and Richardson (2007; 2012) developed FIT-Choice scales that measure each component in the model. These have spurred a wave of research on teacher career motivations, though most of this research has been conducted outside the United States and rarely with urban populations of preservice teachers (Fray & Gore, 2018).

The current body of research using FIT-Choice raises two theoretical questions that are taken up in the current study. One apparently untested aspect of the FIT-Choice model relates to predictors of perceptions of the profession and motivations to teach. Consistent with EVT, Watt and Richardson's (2008) model suggests a chronological sequence in which prior experiences and encouragement from others shape subsequent perceptions. In particular, the model posits that social antecedents such as prior positive teaching and learning experience and social encouragement precede and should predict how people perceive the demands and returns of the profession, their ability beliefs, and values for teaching. The current study takes an initial step in examining this theoretical claim by examining how social antecedents correlate with perceptions,

beliefs, and values at a single time point. A second theoretical issue, which we turn to next, regards how perceived costs are and can be captured in the FIT-Choice model.

Assessing Perceived Costs of a Teaching Career

From an expectancy-value perspective, career choice involves a cost-benefit analysis of the positive and negative consequences of a decision (Eccles et al., 1983). Costs refer to what is lost, suffered, or given up as a result of task engagement. In the last decade, research on the conceptualization and measurement of cost has expanded (Barron & Hulleman, 2015; Bergey, Ranellucci, & Kaplan, 2019; Flake, Barron, Hulleman, McCoach, & Welsh, 2015; Johnson & Safavian, 2016) and empirical studies have demonstrated the importance of cost as a predictor of intentions, choice, and achievement (Andersen & Ward, 2014; Bergey et al., 2018; Conley, 2012; Flake et al., 2015; Gaspard et al., 2015; Jiang et al., 2018; Luttrell et al., 2010; Perez et al., 2014; Rosenweig et al., 2020).

Research on teacher career motivations using an expectancy-value perspective have yet to directly examine cost constructs. Watt and Richardson (2007) suggested costs are indirectly captured in the FIT-Choice model in the extent to which perceived task demands exceed perceived task returns. For example, the view that teaching is a highly demanding profession but has relatively low salary and prestige suggests a discrepancy which may be perceived as a cost. While this approach to capturing costs can be useful, a more direct examination of perceived costs can advance understanding of how people view the drawbacks of becoming a teacher, including distinct cost dimensions. Four cost types that have received the most attention in expectancy-value theory are *task effort cost*, which, applied to a career choice in teaching, refers to the amount of effort required by teaching; *outside effort task cost*, which refers to the extent to which non-teaching responsibilities interfere with teaching; *opportunity cost*, which refers to the

loss of valued alternative; and *emotional cost*, which refers to negative affective experiences associated with teaching such as stress, anxiety and frustration (Flake et al., 2015). The current study extends literatures on cost and teacher career motivation by examining costs alongside expectancies and values in the FIT-Choice model.

Race-ethnicity, Gender, and Career Motivations for Teaching

The question of what motivates people to pursue a teaching career implicates questions of how to retain a more demographically diverse teaching workforce. In the United States, teaching remains a predominately White and female career, with widening racial- and gender-parity gaps between teacher and student demographics. For example, in the 2011-12 school year, 44% of elementary and secondary students were from minority groups, yet this was the case for only 17% of elementary and secondary teachers (Ingersoll et al., 2014). While teacher racial diversity has increased in the past two decades, it is outpaced by the growing ethnic diversity of students. Similarly, the teacher-student gender parity gap has increased in recent decades: from 1980 to 2012, the percentage of female teachers has increased from 67% to 76% (Ingersoll et al., 2014). A growing body of research suggests that lack of teacher gender and racial diversity undermines social and educational benefits that comes with a more racially diverse and gender balanced teaching corp, especially for boys and students of color (Casey et al., 2015; Dee 2004, 2007; Epstein et al, 1998; Sleeter et al., 2015; Woodson & Bristol, 2020). Thus, understanding why people of color and men choose a teaching career can inform efforts to better retain teachers from these groups.

There is limited research directly comparing US racial-ethnic¹ groups of preservice teachers on their career motivations. Literature on preservice and in-service teachers from racial-ethnic minority groups has indicated that many teachers of color are drawn to the teaching profession to make a social contribution to minority students (Gordon, 1993; 2000), to give back to their community (Téllez, 1999), and to work as role models and agents of change for minority youth (Au & Blake, 2003; Frank, 2003). Research has also emphasized the strong influence of family, friends, and significant others in the career decisions of teachers of color (Gordon, 1993; Quiocho & Rios, 2000; Su, 1996). Findings from the scant research that has compared racial-ethnic groups suggest both group similarities and differences (Dilworth, 1991; Kottkamp et al., 1987). In one of the few studies to make such comparisons, Su (1996) found that compared to White teachers, minority teachers were more likely to have lower socio-economic status, report a lack of teacher role models, and report unsupportive parents and friends regarding their decision to become a teacher. Parental concerns about low prestige and earnings of teachers were most pronounced for Asian Americans. Such findings hint at the shared and unique ways that preservice teachers from different racial-ethnic groups might perceive the profession and their motivations to become teachers.

Prior research has identified occasional gender differences in the reported career motivations of preservice and in-service teachers, yet no consistent gender pattern appears to emerge. For example, Watt and Richardson (2008) found that, compared to females, male preservice teachers in Australia ascribed greater importance to job transferability and making a

¹ Our aim is to examine similarities and differences between demographic groups commonly used in research on teacher diversity. We use the term race-ethnicity to acknowledge that Latinx is not a race category, as individuals with Latinx or Hispanic heritage may identify racially as White, Black, or another racial category.

social contribution, viewed teaching more as a fallback career, and perceived lower social status (Watt & Richardson, 2007); yet these findings were not consistent across subject domains (e.g., math vs. science). In a samples of US preservice teachers, Torsney et al. (2017) found that female preservice teachers reported being more motivated to work with children than their male counterparts. By contrast, Watt et al. (2016) found no gender pattern in different career commitment profiles. Therefore, while there are clear gender patterns in who becomes a teacher, no clear gender trends emerge from literature on motivational perceptions of preservice teachers, and more research is warranted to examine whether and how men differ from women in the United States in what attracts them to a teaching career. While investigations of group differences in terms of gender, race-ethnicity, and so forth can illuminate uniqueness, such research must take care to recognize similarities as well as differences in the motivational patterns across social groups as well as the heterogeneity within groups (Authors, in press).

Profile-centered Analysis

Career choice reflects a confluence of motivating factors (Eccles et al., 1983). Profile-centered analyses allow for the examination of holistic patterns of motivational perceptions that are similar across groups of individuals. Profile-centered analyses do not assume homogeneity in the configuration of motivational variables or their interactions; to the contrary, they examine evidence of subgroups that are homogeneous with regard to a set of variables. With a profile-centered approach, the focus is the unique patterns of characteristics—in the current study, motivational beliefs and perceptions—within the sample, and how these subgroups may differentially relate to theorized antecedents, outcomes, and demographics. Accordingly, this analytic approach aligns with a holistic perspective of college student development and

motivation that views the individual as an integrated and self-organizing unit of development (Baxter Magolda, 2009; Kegan, 1994; Magnussen, 1995).

Profile-centered analyses have been fruitful in identifying distinct patterns of motivation that are linked to differential educational outcomes (e.g., Conley, 2012; Karabenick, 2003; Meece & Holt, 1993; Tuominen-Soini et al., 2011), yet their application in the field of teacher motivation remains limited. We are aware of two studies of teacher career motivations that have used profile-centered approaches. Watt and Richardson (2008) identified unique clusters of preservice teachers within an Australian sample based on their professional commitments and career aspirations at the end of their training; the authors then compared clusters on their reasons for choosing a teaching career, perceptions of the profession, and demographics. Watt, Richardson and Wilkins (2014) used a similar method in a mid-western US sample. Both studies found identifiable clusters of teachers according to their career commitments and aspirations, and these clusters show differential relations with career motivations and perceptions of the profession. In the current study, we complement this research by examining the presence and nature of distinct profiles regarding motivational perceptions and beliefs, which we then use to examine potentially unique relations with theorized antecedents and outcomes, as well as to examine how women, persons of color and other demographic groups are represented across profiles.

In summary, understanding what draws people to become teachers, especially members from underrepresented groups of urban students, can shed light on how to retain a more diverse and robust teaching workforce—yet theoretically grounded research on the career motivations of US urban preservice teachers remains limited. Recent theoretical and empirical research on perceived costs within expectancy-value theory highlight an opportunity to extend Watt and

Richardson's FIT-Choice model by including explicit measures of perceived cost of a teaching career. A profile-centered approach can reveal the unique patterns of perceived costs and other perceptions within subgroups of preservice teachers, and such an approach can reveal the extent to which these profiles occur across demographic groups.

Current Study

In the current study, we examine the following four research questions:

Research Question 1 (RQ1). What motivational profiles emerge within a diverse urban sample of US preservice teachers?

Research Question 2 (RQ2): Are motivational profiles differentially associated with level of satisfaction with career choice, planned persistence, planned professional development, and leadership aspirations?

Research Question 3 (RQ3). Are socializing influences and the perception of teaching as a fallback career differentially associated with motivational profiles?

Research Question 4 (RQ4). Are there unique patterns of motivational profiles across gender, race-ethnicity, and other demographic variables?

Figure 1 illustrates the theorized relations that guide our research questions and analytic decisions. Following the FIT-Choice model (Watt & Richardson, 2007; 2012), prior experiences and socializing influences (Set A) are theorized antecedents of perceptions of the profession, self-perceptions, and subjective task values (Set B), which are proximal predictors of career choice and satisfaction (Set C). We examined the pattern of relations among variables at a single timepoint. We modified the FIT-Choice model in two ways. First, we added cost constructs (Set B). Second, we aligned fallback career as an antecedent of motivational profiles rather than a proximal predictor because items ask about prior experience and perceptions (e.g., "I was not

accepted into my first-career choice”). Motivational profiles were based on variables from Set B of Figure 1 and Table 1. We selected LPA variables for the motivational profile based on the FIT-Choice model and EVT. Accordingly, profiles were based on variables tapping ability beliefs, task values, and costs. We included perceived task demands and returns as part of the profile because of their relations to perceived values (salary, status) and costs (demanding career, training) associated with the profession.

A profile-centered analytic approach evaluates evidence of relatively homogenous subgroups within the whole sample. Prior research has demonstrated that subgroups of preservice teachers have more and less adaptive professional commitments and aspirations that were associated with different motivational beliefs (Richardson & Watt, 2006; Watt et al., 2014). By extension, we expected to observe subgroups with unique patterns of perceptions, expectancies, values, and cost; yet we do not make specific predictions about the number and nature of these patterns. Based on expectancy-value theory and prior literature (Eccles & Wigfield, 2020; Richardson & Watt, 2006; Watt et al., 2014), we expected profiles with favorable perceptions of the profession, high ability beliefs and values, and low costs to be associated with greater career commitments and aspirations. At the same time, we were interested in whether distinct profiles might have similar relations to theorized outcomes. Guided by the FIT-Choice model (Watt & Richardson, 2007), we expected that perceived socialization such as reported encouragement from others and prior positive teaching and learning experiences would be positively associated with ability beliefs and subjective task values, perhaps particularly in terms of intrinsic value, social utility value, and lower perceived costs. These expectations rest on the assumption that social encouragement and positive prior experiences bolster ability beliefs and potentially highlight personal and social benefits of teaching. By

contrast, we expected viewing teaching as a fallback career to be associated with higher costs, a less favorable view of the professional demands and returns, and possibly lower intrinsic value.

Given the gendered, cultural, and socio-economic patterns in teacher demographics, we explored the distribution of profiles across gender, race-ethnicity, certification level (e.g., secondary vs. primary), parental education, family income, and student status (graduate vs. undergraduate). College students of color have been found to be less likely to choose a teaching career than their White counterparts (Madkins, 2011). For example, Asian American youth are often strongly encouraged to pursue high paying, prestigious careers (Author, under review; Leong & Chou, 1994; Leong & Serafica, 1995). Such cultural influences may manifest in students of color reporting less social encouragement for teaching, greater endorsement of teaching as a fallback career, higher opportunity costs, and less favorable views of teacher salary or status (Su, 1996). In addition, gendered social expectations for men to pursue high salary and high prestige occupations and the overrepresentation of women in the teaching workforce may result in men reporting higher opportunity costs and less favorable perceptions of the profession compared to women. Yet it is unclear how these social forces affect preservice teachers' motivation, given they have expressed an initial interest and investment in pursuing a teaching career. Prior research has identified occasional group differences in motivations for a teaching career, including between men and women (Torsney et al., 2017; Richardson & Watt, 2006), preservice teachers of different race-ethnicities (Su, 1996), and elementary vs. secondary teachers (Torsney et al., 2017; Ponnock et al., 2018; Richardson & Watt, 2006; Watt & Richardson, 2007). However, the literature on group differences in preservice teacher motivations lacks convergence, and therefore we do not propose specific hypotheses about the nature of group differences.

The current study extends the existing research on teacher career motivation in several ways. First, we examine preservice teachers' motivational beliefs in holistic fashion to capture unique constellations of beliefs. Second, we extend Watt and Richardson's FIT-Choice model by including explicit measures of multiple perceived cost of a career in teaching. Third, we examine how perceived socialization and the perception of teaching as a fallback career are associated with profile membership, and in doing so, provide a novel empirical test of the theorized relations in the FIT-Choice model. Finally, we examine how preservice teachers of different racial-ethnic groups, gender, and other demographic variables are represented across profiles, using an approach that balances exploration of group difference with documenting inherent diversity within demographic groupings.

Methods

Participants

We recruited 630 uncertified preservice teachers enrolled in early childhood, primary, or secondary education teacher training courses in a large urban university in eastern United States. Participants had a mean age of 28 years 10 months ($SD = 7$ years 4 months) and self-identified gender and race-ethnicity: 473 (75.1%) identified as female; 148 (23.5%) identified as male; 1 identified as "other than male or female," and 8 (1.3%) chose not to disclose or left the question blank. Regarding race-ethnicity, 145 (23.0%) identified as Asian or Asian American; 63 (10.0%) identified as Black or African American; 129 (20.5%) identified as Latinx or Hispanic; 234 (37.1%) identified as White or Caucasian/non-Hispanic; 43 (6.8%) identified as more than one race; 2 identified as Native American, and 14 (2.5%) left the question blank. The sample consisted of 237 undergraduate (37.6%) and 390 (61.9%) graduate and post-baccalaureate students; 3 students did not indicate student status. Students were pursuing teaching certifications

in early childhood ($n = 92$), elementary ($n = 179$); secondary ($n = 195$) education, or more than one category ($n = 134$).

Procedures

Participants were recruited in several ways: email invitations were sent to students enrolled in teacher training programs and courses; informational flyers were posted in public areas of colleges frequented by preservice teachers; instructors of teacher preparation courses made in-class announcements and posted information on course websites; and the study was advertised in an electronic system for students seeking required research credit. Participants completed the online survey either in partial fulfillment of a research participation requirement as part of their teacher training program ($n = 282$) or were compensated with a \$10 gift code or \$10 cash ($n = 260$). Participants completed the questionnaire using SurveyMonkey platform via a direct hyperlink that was provided to them.

Measures

Factors Influencing Teacher Choice

Teaching career motivations were assessed using the FIT-Choice scales (Watt & Richardson, 2007). We administered the full FIT-Choice instrument, which consists of 52 items across 18 subscales (labels in italics), addressing perceived socialization (*prior teaching and learning experiences, social influence, social dissuasion*), perceptions of the profession (*high demand career, expert career, salary, social status, teacher morale*), and motivational perceptions (*ability beliefs, intrinsic value, time for family, job security, job transferability, working with children, enhancing social equity, making a social contribution, and shaping the future of children*); an addition scale assesses whether teaching was a *fallback career*. All FIT-Choice variables used a 7-point Likert-style response scale, presented as a horizontal slider with

anchors at 1 (not at all) and 7 (extremely). This instrument has demonstrated good psychometric properties with preservice and current teachers in many countries, including the United States (Watt & Richardson, 2007; Watt & Richardson, 2012).

The large number of FIT-Choice scales presented a challenge for conducting LPA, since models with many variables make the identification and interpretation of latent profiles difficult (Dean & Raftery, 2010). Therefore, we sought to reduce the number of variables entered into the analysis while still capturing the wide-range of factors included in the FIT-Choice model. In their validation analyses of the FIT-Choice questionnaire, Watt and Richardson (2007) demonstrated that many scales formed higher order factors. Consistent with prior research that has reduced the number of FIT-Choice variables by examining second-order factors (e.g., Ponnock et al., 2018), we created standardized mean scores for the each second-order FIT-Choice variable used in the LPA. For FIT-Choice variables without second-order factors, we calculated standardized mean scores for first-order scales. Table 1 illustrates the first- and second-order FIT-Choice scales used in analyses, along with internal reliability and example items. All scales demonstrated good reliability, except *social dissuasion* ($\alpha = .513$), which was dropped from analyses.

Perceived Costs of Teaching

We assessed four types of perceived costs of a teaching career, guided by common cost types assessed in the expectancy-value literature. We modified Flake et al.'s (2015) measures to apply to the task of teaching, rather than tasks associated with coursework. *Task effort cost* assessed the perception that teaching required too much time and effort. *Loss of Valued Alternatives* assessed the perception that teaching requires foregoing other desirable ways to spend time and energy. *Other task effort costs* assessed the perception that the effort required for

non-teaching responsibilities interfere with the ability to teach. *Emotional costs* assessed the perception that teaching involves negative emotions and stress. Following Flake et al., responses were recorded using a 9-point Likert-style response scale, with anchors at 1 (completely disagree), 5 (neither agree nor disagree), and 9 (completely agree).

In order to potentially reduce the number of cost variables used into the LPA, we conducted exploratory Principle Axis Factoring with an Oblimin rotation (SPSS vers. 25). We used changes in eigenvalues, percent variance explained by each factor, inspection of the scree plot, and factor loadings in the pattern matrix to evaluate the solution. Results suggested cost items could be reduced to three factors that explained a total of 74.2% of the variance, with the first, second, and third factor, explaining 55.7%, 11.2%, and 7.2% of the variance, respectively. Task effort cost and emotional costs items loading onto separate factors, and loss of valued alternatives and other task effort cost items loading onto a third factor, consistent with prior research indicating the conceptual overlap of these constructs (Bergey et al., 2019). Correlations among factors ranged from .51-.63. An alternative four-factor model explained only 4.1% more variance; based on these results and given our aim of reducing variables for the profile analysis, we created standardized mean cost scores for *task effort cost*, *emotional cost*, and an aggregate cost variable we labeled *opportunity cost*. The resulting scales demonstrated good reliability (see Table 1 for Cronbach's alphas, number of items, and example items).

Career Satisfaction, Commitment, and Aspiration

We assessed students' commitment and professional aspiration to a teaching career using Professional Engagement and Career Development Aspirations scales (PECDA; Watt & Richardson, 2007). PECDA consists of 4 scales: planned persistence, planned effort, planned professional development, and leadership aspirations. We assessed satisfaction with career

choice using a 3-item scale developed by Watt & Richardson (2007). PECDA and satisfaction variables used a 7-point Likert-style response scale, with anchors at 1 (not at all) to 7 (extremely). All scales demonstrated good reliability (see Table 1 for Cronbach's alphas, number of items, and example items). Standardized mean scores were used in analyses.

Additional Questionnaire Information

Participants self-reported the educational achievement for each parent using 8-point Likert-style scales. To streamline analyses, a variable was calculated to indicate the highest degree earned by at least one parent. Participants self-reported family income during high school on a scale with 8 income bands (ranging from "Under \$20,000" to "Over \$120,000"). Participants also indicated their age, gender, racial-ethnic group, and degree information (e.g., program and certification level). The questionnaire was delivered in five sections: Section 1 consisted of educational program information; Section 2 consisted of FIT-Choice items about socializing influences, fallback career, ability beliefs, task values, perceptions of the profession, and career satisfaction, with items interleaved across scales following the order as described in Watt and Richardson (2007); Section 3 consisted of PECDA scales with items interleaved across scales; Section 4 consisted of cost items grouped by construct; and Section 5 consisted of background and demographic information. Within sections, questions were grouped into sets of 8-10 questions, with headings indicating instructions and progress in the questionnaire. The questionnaire consisted of approximately 140 questions. Median completion time was 20 minutes.

Preliminary Analyses and Analytic Plan

Variables were screened for normality and the presence of univariate outliers. Skew statistics were less than |2.0| and kurtosis values |4.0|, indicating normal distributions, with one

exception: *planned effort* was highly leptokurtic (kurtosis = 18.92), and therefore we dropped this variable from analysis. Missing data constituted less than 2% of the total data, with missing data at the item level ranging from 0 to 4.1%. Little's MCAR test was not significant ($\chi^2 = 16503.787$, $df = 17093$, $p = .999$) and since there were no variables with 5% or more missing values, T-tests were not conducted. We found no relations among observed variables and missing data, suggesting missing data were missing at random (Enders, 2010). Thus, missing data were handled using full information maximum likelihood estimation (FIML) in LPA models. Students with missing data on career outcome variables were included in the profile analyses but not in the outcome MANOVA analysis.

To investigate what motivational profiles emerged from the data, we conducted LPA (Collins & Lanza, 2010) on nine variables tapping ability beliefs, values, cost, and task perceptions (Table 1, Set B). LPA is part of a family of analyses sometimes called person-centered or profile-centered analyses. Latent profiles refer to subgroups or clusters of individuals within a sample who share similarities across variables. LPA seeks to identify the number and nature of subgroups within a sample based on patterns of overlap and co-occurrence among variables. LPA is a model-based alternative to traditional forms of cluster analyses and has the advantages of rigorous statistical tests for competing models, less arbitrary cluster criteria, and more accurate matching of latent profile membership to actual group membership under simulation conditions (Madgidson & Vermunt, 2002).

Using Mplus (vers. 7; Muthén & Muthén, 2012), we tested a series of sequential models starting with a 1 latent profile model (i.e., the entire sample), followed by a 2 latent profile model, then 3 latent profiles, and so on through to a model with six latent profiles. We determined the best solution (i.e., number of latent profiles) using a set of fit statistics and

considerations that indicated the adequacy of the model relative to more parsimonious models (i.e., with fewer profiles). Following suggestions by Kline (2011), for each increase in the number of latent profiles, we examined fit indices to assess whether improved model fit merited the adoption of a less parsimonious model. We evaluated relative model fit with information criterion statistics, the adjusted likelihood ratio test, the Entropy index, and practical and theoretical considerations (Nylund et al., 2007). For the Akaike Information Criterion (AIC; Akaike, 1987), Bayesian Information Criterion (BIC; Schwarz, 1978), and the sample-size Adjusted Bayesian Information Criterion (ABIC; Sclove, 1987), a smaller statistic indicates a better fitting model. The adjusted Lo-Mendel-Rubin adjusted Likelihood Ratio Test (LMR-LRT; Lo et al., 2001) indicates whether a model with more latent profiles has a significantly better fit compared to a more parsimonious model, considering the change in degrees of freedom (Nylund et al., 2007). The Entropy index indicates the “cleanness” with which participants can be classified into one latent group or another. Higher entropy values indicate cleaner classifications of individuals into latent groups; entropy values over .80 indicate an adequately clean classification (Kline, 2011). In addition to model fit indices, we evaluated latent profiles in terms of their practical and theoretical usefulness since latent profiles should differ in ways that are of theoretical and/or of practical interest to the focus of the study (Kline, 2011).

Once the number of latent profiles were identified, we investigated our second research question—how profile membership was associated career commitments—using a one-way MANOVA, in which profile membership was the independent variable and satisfaction with career choice, planned persistence, planned professional development, and leadership aspirations were dependent variables (Set C in Table 1). To estimate effect sizes for MANCOVA analyses, we report partial eta squared (η_p^2), which indicates the proportion of total variance in a

dependent variable that is associated with group membership after partialing out effects of other variables (Richardson, 2011); we interpret effects of .01, .06, and .14 as small, medium, and large effects, respectively (Cohen, 1988). To examine how perceived socialization and the perception of teaching as a fallback career relate to motivational profiles (research question 3), we conducted a logistic regression, in which latent profile membership was predicted by prior teaching and learning experiences, social influence, and the choice of teaching as a fallback career (Set A in Table 1). Finally, we examined whether demographic variables were non-randomly distributed across latent profiles through six chi square tests: profiles by race; profiles by gender; profiles by certification level; profiles by family income; profiles by parental education; and profiles by undergraduate/graduate student status.

Results

Latent Profile Analyses (RQ 1)

Table 2 includes the fit indices, entropy statistics, and LMR-LRT test used to determine the number of latent profiles. Results from analyses suggested four unique and theoretically meaningful latent profiles. Figure 2 illustrates each profile's standardized mean scores for the perceived professional demands and returns; ability beliefs; intrinsic, personal utility, and social utility values; and task effort, opportunity, and emotional costs. Standardized mean scores and standard errors for each profile are presented in Table 3. We describe the profiles in terms of both variable means relative to the whole sample as well as the original response scales (Wormington & Linnenbrink-Garcia, 2017). For variables assessed with a 7-point scale (i.e., all FIT-Choice variables), we characterized scores as follows: low (1.0-1.9), moderately low (2.0-2.9), moderate (3.0-4.9), moderately high (5.0-5.9), high (6.0-7.0). For variables assessed on a 9-

point scale (i.e., cost measures), we characterized scores as follows: low (1.0-2.5), moderately low (2.5-4.0), moderate (4.0-5.9), moderately high (6.0-7.4), high (7.5-9.0).

Profile 1: High Values, Low Costs

The largest profile, comprising 38.3% of the sample, was characterized by high scores regarding task demands ($M = 6.09$) and moderate, but above-sample-average scores for task returns ($M = 4.37$). Students in this profile indicated high ability beliefs ($M = 6.59$), high intrinsic ($M = 6.89$) and social utility values for teaching ($M = 6.62$), and moderate personal utility values ($M = 4.66$). This profile was characterized by moderately low task effort ($M = 3.17$) and low emotional ($M = 2.46$), and opportunity costs ($M = 1.44$).

Profile 2: High Values, Moderate-to-High Costs

The second profile, comprising 31.6% of the sample, was characterized by high task demands ($M = 6.22$) and moderate and slightly below-sample-average task returns ($M = 3.98$). Students in this profile indicated high and slightly above-sample-average ability beliefs ($M = 6.16$), intrinsic value ($M = 6.52$), and social utility values ($M = 6.36$), and moderate personal utility values ($M = 4.78$). This profile was characterized by moderate emotional cost ($M = 5.77$), moderately high effort cost ($M = 6.56$) and moderately low opportunity costs ($M = 3.76$).

Profile 3: Moderate Values, Low Costs

The third profile, comprising 19.8% of the sample, was characterized by moderately below-sample-average scores for task returns ($M = 3.85$) and personal utility value ($M = 6.14$), along with more pronounced negative scores (i.e., $> .5 SD$) for task demands ($M = 5.60$), ability beliefs ($M = 5.50$), and social utility values ($M = 5.55$), relative to others in the sample. Although this profile was characterized by consistent below-average scores, it should be noted that non-standardized means were still above the mid-point (4 on a 7-point scale) for all FIT-Choice

variables, except task returns. This profile was characterized by moderately low task effort cost ($M = 3.58$) and emotional cost ($M = 3.71$) and low opportunity costs ($M = 2.06$).

Profile 4: Moderate Values, Moderate-to-High Costs

The smallest profile, comprising 10.3% of the sample, was characterized by below-sample-average task demands ($M = 5.52$), task returns ($M = 3.78$), ability beliefs ($M = 4.67$), intrinsic value ($M = 4.93$) and social utility value ($M = 5.24$) and average personal utility value ($M = 4.54$). This profile was characterized by moderately high task effort cost ($M = 6.15$) and moderate emotional cost ($M = 5.80$) and opportunity costs ($M = 4.17$).

Relations between Profiles and Career Satisfaction, Commitment and Aspirations (RQ 2)

Given the presence of different profiles, we turned to our second research question: how latent profiles related to career satisfaction, commitment, and aspirations. A one-way MANOVA revealed a significant multivariate effect of latent profile ($F [12, 1587.742] = 28.562$, *Wilk's Lambda* = .596, $p < .001$). Tests of univariate between-subjects effects indicated significant differences for each dependent variable: satisfaction with choice ($F [3, 606] = 82.804$, $p < .001$, $\eta_p^2 = .292$), planned persistence ($F [3, 606] = 60.729$, $p < .001$; $\eta_p^2 = .232$), leadership aspirations ($F [3, 606] = 30.040$, $p < .001$; $\eta_p^2 = .130$), and planned professional development ($F [3, 606] = 71.042$, $p < .001$; $\eta_p^2 = .261$). Estimated marginal means and 95% confidence interval for each variable by latent profile are illustrated in Figure 3 and summarized in Table 4. Post hoc Bonferroni tests indicated that students in latent profile 1 reported higher career satisfaction than all other groups and that students in latent profiles 2 and 3, which did not significantly differ from each other, had significantly higher career satisfaction than latent profile 4. The same pattern of significant differences occurred for planned persistence and planned professional

development. For leadership aspirations, profiles 1 and 2 reported higher leadership aspirations than profiles 3 and 4, with no significant differences between profiles 1 and 2 or profiles 3 and 4.

Relations between Profiles and Perceived Socialization and Fallback Career (RQ 3)

We then examined whether perceived socialization and the perception of teaching as a fallback career were associated with latent profiles. In Mplus, we regressed profile membership on three variables—prior teaching and learning experience, social influences, and fallback career. Given the four-profile solution, results are expressed as probabilities for being in one profile vs. another, as a function of a change in the predictor variable. We used latent profile 1 as the referent since this was the largest group; thus, each estimate is expressed as the likelihood of being in a given profile relative to being in profile 1. Prior teaching and learning experiences and social influence scores were significant negative predictors of profile 3 and profile 4 membership, and were not significantly associated with profile 2 (Table 5), indicating these variables were associated with latent profiles with below average values. Specifically, a standard deviation decrease in prior teaching and learning scores was associated with being twice as likely to be in profile 3 (vs. 1) and three times as likely to be in profile 4 (vs. 1). Similarly, a standard deviation decrease in social influence scores was associated with being 2.5 times as likely to be in profile 3 (vs. 1) and 3.4 times as likely to be in profile 4 (vs. 1).

Viewing teaching as a fallback career had a significant positive relationship with membership in profiles 2 and 4, and a non-significant negative association with membership in profile 3. These results suggest that the more a student perceived teaching as a fallback career the more likely she or he would be in a latent profile with high costs. Specifically, a standard deviation increase in fallback career scores was associated with being 2.6 times as likely to be in profile 2 (vs. 1) and 4.5 times as likely to be in profile 4 (vs. 1).

Distributions of Demographic Variables Across Latent Profiles (RQ 4)***Race-ethnicity***

A 4 (profiles) x 5 (racial-ethnic groups: Asian/Asian-American, Black/African-American, Latinx/Hispanic, White, multi-racial) chi square test revealed a significantly non-random distribution of racial-ethnic groups across profiles ($\chi^2 [12] = 45.547, p < .001$; distributions are shown at the top of Table 6). Standard residuals suggest that, relative to the whole sample, Asian/Asian American students were under-represented in latent profile 1 (High Values, Low Costs) and were over-represented in latent profile 2 (High Values, Moderate-to-High Costs) and profile 4 (Moderate Values, Moderate-to-High Costs). These distributions suggest that Asian/Asian American students were more likely than other racial-ethnic groups to have motivational profiles that included the perception of moderate-to-high costs. Results also suggested significant non-random distributions for White students—who were over-represented in the latent profile 1 and modestly under-represented in latent profile 2—and multi-racial students, who were modestly under-represented in latent profile 4. Latinx/Hispanic and Black/African American students appeared to be randomly distributed across latent profiles.

Gender

A 4 (profiles) x 2 (gender: female, male) chi square test revealed a significantly non-random distribution of gender across profiles ($\chi^2 [3] = 9.670, p = .022$; distributions are shown in the middle of Table 6). Standard residuals suggest that men appeared to be moderately over-represented in latent profile 4 (Moderate Values, Moderate-to-High Costs).

Certification Level

A 4 (profiles) x 4 (level: early childhood, elementary, secondary, multilevel) chi square test revealed a significantly non-random distribution of certification levels ($\chi^2 [9] = 17.301, p =$

.044; distributions are shown at the bottom of Table 6). Standard residuals suggest that secondary preservice teachers were moderately under-represented in latent profile 1 (High Values, Low Costs) and moderately over-represented in latent profile 4 (Moderate Values, Moderate-to-High Costs).

Other Demographic Variables

We observed non-significant chi-square values for the distribution of latent profiles by family income ($\chi^2 [18] = 28.037, p = .061$), parental education ($\chi^2 [18] = 25.345, p = .116$), and undergraduate status ($\chi^2 [3] = 0.605, p = .895$).

Discussion

We examined the factors influencing teacher career choice and the perceived costs of this choice within a diverse sample of urban preservice teachers. We found four unique motivational profiles, and profiles were differentially related to perceived socialization, fallback career, satisfaction with career choice, and planned professional commitment. Representation by gender, race-ethnicity and certification level were unique across profiles. As we discuss below, these findings extend theory in teacher career motivation by identifying perceived costs as an important dimension of motivational profiles and by providing support for theorized relations in the FIT-Choice model. Group comparisons suggest many similarities across demographic variables as well as subtle differences.

Presence and Nature of Profiles

Consistent with prior research, students tended to view teaching as demanding and with modest returns in terms of social status, salary, and morale (Watt & Richardson, 2012), regardless of profiles. Also consistent with literature, students tended to be drawn to teaching for social utility values (e.g., altruistic reasons) more than for personal utility values (Reeves &

Lowenhaupt, 2016; Jungert et al., 2014; Watt & Richardson, 2006; Watt & Richardson, 2012).

While these patterns are reflected in the whole sample, our findings add to the literature on students' motives to teach by identifying distinct motivational profiles, which were characterized by differential relations among perceptions of the profession, ability beliefs and values, on the one hand, and perceived costs on the other.

The most common profile—and, from the perspective of EVT and FIT-Choice, most adaptive—was characterized by relatively high task returns, high ability beliefs, high social utility values, and low costs. Yet, the majority of students (approximately 60%) had profiles that indicated patterns of perceptions that may undermine persistence in the field of teaching. Notably, perceived costs of teaching showed a high degree of variability across profiles, both in the extent to which costs were salient (i.e., how strongly a student endorsed cost items) as well as in their relations to ability beliefs, values, and perceptions of the profession. In profile 1, relatively high positive perceptions were paired with low costs while the opposite was the case for profile 4. In other cases, relatively high positive perceptions were paired with high costs (profile 2) or vice versa (profile 3). Teaching is often regarded as a demanding, high stress career (Kyriacou, 2001), features which are often heightened in urban settings (Abel & Swell, 1999). Our study suggests that students differed in whether they viewed these demands as costs, and whether such costs were independent of ability beliefs and values.

Our findings shed light on how perceived effort, opportunity, and emotional costs of teaching relate to the FIT-Choice model. According to Watt and Richardson (2007), a type of cost is captured in the extent to which task demands (i.e., viewing the career as requires expertise and being demanding) exceed task returns. Interestingly, task demands exceeded task returns for all profiles, including profiles reporting either high or low effort, opportunity, and emotional

costs. This pattern suggests that directly assessing perceived costs captures perceptions that are distinct from discrepancies between task demands and task returns. Our findings also underscore important considerations for measuring costs (Flake et al., 2015). For example, there is considerable conceptual overlap between FIT-Choice's *demanding career* scale and the *effort cost* and *emotional costs* scales used in the current study. Both assess the extent to which a respondent perceives teaching as demanding in terms of time, effort, and emotion. Yet only the latter scales directly assessed the extent to which these characteristics are viewed as negative or costly. As our results indicate, relatively low task demands scores as assessed by FIT-Choice scales were sometimes paired with high perceived effort and emotional costs (e.g., profiles 1 and 4). Further, in addition to factor analyses indicating conceptually distinct cost factors, the latent profile analysis suggests that some students (e.g., profile 2) report varying levels of different types of costs. While our study takes a first step toward assessing perceived costs of teaching, future research that investigates how preservice teachers conceptualize costs and how these can be effectively assessed will advance the literature.

Profiles and Relations with Other Constructs

Beyond identifying unique patterns of motivational beliefs within our sample, we found that profiles were differentially related to perceived socialization, fallback career, career satisfaction, and planned commitment variables. An interpretation of these relations must bear in mind the single time-point correlational nature of the data, which cannot provide evidence of causal relations. The associations among profiles, theorized antecedents, and theorized outcomes (illustrated in Figure 1) may reflect mutual causal relations or relations in directions other than indicated by the FIT-Choice model. Further, EVT posits that socialization and prior experience

drive self-perceptions, task perceptions, and choice in a recurring cyclical and emergent fashion (Eccles, 2009).

That said, our results provide a picture of associations among sets of variables that have been theorized to relate to variables in motivational profiles. We found that students who reported higher prior teaching and learning experiences and encouragement from others were more likely to have a motivational profile with higher scores for positive perceptions of the profession, ability beliefs, and personal and utility value for the profession. This pattern lends novel support to the theoretical assumption of the FIT-Choice model (Richardson & Watt, 2006, Watt & Richardson 2007) that appears to have received little empirical attention to date. Our results suggest that, despite reporting relatively high values, prior teaching and learning experiences and social encouragement may not protect against perceived costs given that the predictors did not have differential relations between profiles with low costs (profile 1) or high costs (profile 2). By contrast, we found that students who perceived teaching more as a fallback career were more likely to have motivational profiles with high costs (profiles 2 and 4). This pattern corroborates prior research which has shown maladaptive motivations and outcomes for students who do not view teaching as their ideal career choice (Richardson & Watt, 2006, Watt & Richardson, 2012; cf. Wong et al., 2014)

Profiles were also differentially related to career satisfaction and plans to persist in the profession, pursue professional development, and aspire to leadership. Not surprisingly, students who held high ability beliefs and values and perceived low costs (profile 1) reported greater satisfaction with their career choice, and greater planned persistence and professional development, and leadership aspirations; students with the opposite pattern (profile 4) reported lower satisfaction and commitment. The patterns found here with a racially diverse urban US

sample support theorized relations in the FIT-Choice model and are consistent with empirical research (Torsney et al., 2019; Watt & Richardson, 2007). We extend the literature by showing how different combinations of motivational beliefs and perceptions may have similar associations to theorized outcomes. For example, profile 2 and 3 did not differ in their career satisfaction, planned persistence, and planned professional development, and profiles 1 and 2 did not differ in the leadership aspirations, despite differences in salience of both positive perceptions and values. These findings underscore the importance of profile-centered approaches to understand teacher motivations and suggest that both the salience of perceptions and the relative balance of positive to negative perceptions are factors that influence preservice career satisfaction and commitment. The distinct combinations of motivational perceptions and differential relations with theorized outcomes raise questions for future research. In particular, how do both the salience of costs and values as well as the relative balance of costs and values relate to outcomes such as persistence in the profession. For example, is a teacher who reports both high values and high costs as likely to persist in the profession as one who holds more modest values and modest costs?

Profiles and Demographic Variables

Another important finding of the study is that we observed racial/ethnic-, gender-, and certification level-specific patterns in profile membership. It is important to consider the group differences observed in this study in light of the substantial heterogeneity with each group; as our results clearly demonstrate each profile contained substantial numbers of both men and women, people of each racial-ethnic group, and other demographic categories. Nevertheless, it is critical for motivation researchers to consider culture in relation to theory (see DeCuir-Gunby & Schutz,

2014; Zusho & Kumar, 2018) as subtle group differences can be useful in understanding how cultural and social factors may shape motivations for teaching.

Race

With regard to race, White students were over-represented in profile 1, which was characterized by the highest scores for FIT-Choice variables and low perceived costs, and which showed the strongest associations with the adaptive outcome variables. In contrast, Asian and Asian American students were under-represented in profile 1 and were over-represented in profiles with higher perceived costs (profile 2) and lower positive perceptions (profile 4). Cultural factors may make costs of a teaching career more salient for Asian and Asian American students. Although our data cannot uncover the cause, above-average perceived costs among Asian and Asian American preservice teachers may reflect a cultural pattern in which students are discouraged from becoming teachers by family and friends, who want them to aspire to occupations perceived by their communities to have high social status and salary, as previous research has suggested (Gordon, 2000; Su, 1996).

Gender

Men in our sample were over-represented in profiles 4, indicating that men were more likely than women to report relatively low task demands and returns, ability beliefs, and values, and relatively high costs. These findings are consistent with some prior literature which has found that men held lower values for some aspects of the profession (Torsney et al., 2017; Watt et al., 2007). Our profile-centered analyses extend this literature by suggesting that men, at least at the start of their careers, may be more likely than female students to report relatively low positive perceptions and to perceive the effort and emotional work of teaching and foregone opportunities, as costs. This motivational profile may reflect social pressures for males to earn

high salaries or men's concerns about joining a career in which they are an underrepresented group (Authors, in press). Curiously, this gender difference in perceptions seems to contradict gender patterns in actual preservice and in-service teacher persistence, which indicates that male preservice teachers are less likely to leave teacher training programs and the profession than their female counterparts (Guarino et al., 2006). Future research is needed to understand how preservice teacher gender—and its intersection with other salient collective identities (Authors, in press; Cole, 2009)—shape perceptions and predict actual persistence behaviors.

Certification Level

We found that secondary education preservice teachers were under-represented in profile 1 and over-represented in profile 4, suggesting that students training to be middle and high school teachers were more likely to have a maladaptive motivational profile. This pattern is consistent with greater attrition rates among secondary teachers (Guarino et al., 2006) and generally aligns with prior research that has identified occasional single-variable differences by certification level, often favoring preservice teachers of younger children (Ponnock et al., 2018; Torsney et al., 2017). Our study extends this literature by showing that secondary teachers are slightly more likely to hold both lower positive perceptions and high perceived costs. There are several possible explanations: secondary education preservice teacher may be more likely to have greater concerns about behavioral problems with older students (Beaman et al., 2007), and this may be associated with lower intrinsic value and greater perceived effort and emotional costs. Given their substantial training in particular academic subjects, secondary education teachers may compare teaching to other viable career options; this may result in lower perceived task returns and heightened opportunity costs.

Limitations

Our findings should be considered in light of study limitations. All data were collected at a single time point, which may inflate correlations between variables, and, as noted previously, our study design does not provide evidence of causal relations. In addition, future research that examines longitudinal relations would provide a valuable extension of the findings of the current study. Also, our analyses indicated Black and African American students were randomly distributed across profiles, but the small sample size for this group lowered the statistic power of the analysis and may have failed to reveal distinct patterns, which are suggested in the descriptive counts. Further, with a larger sample, especially of men and persons of color, important questions of intersectionality could be explored. Profile analysis is a bottom-up, empirically driven analysis, which can result in profiles that are idiosyncratic to a particular sample. The profiles we identified in the current study reflect distinct combinations of relatively high or low positive perceptions paired with relatively high or low costs; whether these theoretically interesting profiles can be replicated in other samples that differ by culture and context is an important open question for future research. In addition, the latent subgroups that emerged in profile-centered analyses contain heterogeneity; therefore, analytic methods that adopt the individual as the unit of analysis, rather than subgroups, can complement and extend understanding of the diverse ways in which motivational variables manifest and interact to shape career decisions and commitments (e.g., Bergey et al., 2019).

Implications

We know that people choose a teaching career for many reasons (Fray & Gore, 2018) and our study suggests practical value in understanding how students' motives group together. Such a holistic approach could be applied within teacher training programs to identify groups of students with different patterns of perceptions and offer supports for students to explore their

commitment to the profession. The extent to which students endorsed costs, in particular, was highly variable and distinguished profiles, suggesting it may be useful for teacher training programs to provide opportunities for students to explore their concerns about the profession. This might be done through candid conversations with professors or satisfied current teachers about the drawbacks of the profession and how they grappled with and navigated challenges. Our findings also suggest that students that viewed teaching as a fallback career were more likely to hold motivational beliefs and perceptions that may undermine persistence and commitment to the teaching field (Watt & Richardson, 2006, 2012). Therefore, students who switch majors to teaching after other majors did not work out may be more likely to hold fragile professional commitments and may require increased attention from instructors and advisors to support them in the career decision-making. Our results suggest that interventions to support students' persistence and satisfaction in the teaching profession may be designed to specifically target prior learning experiences and social influence. For example, providing students with more opportunities to mentor or tutor peers or younger children may lead to positive experiences and encouragement that trigger and sustain a nascent interest in teaching. Interventions might also facilitate encouraging interactions between current and preservice teachers, such as reassuring notes from teachers that focus on positive teaching experiences. In addition, a growing literature on the efficacy of reflective writing to bolster perceived utility value and lower perceived costs (e.g., Harackiewicz et al., 2016; Hulleman et al., 2017; Rosenzweig et al., 2019) suggests possible applications to support the persistence and satisfaction of preservice teachers. One area where a utility value intervention has been successful adapted to preservice teachers is in relation to using technology in future teaching practices (Kale & Akcaoglu, 2017). A brief writing task where preservice teachers reflected on the relevance of technology increased self-reported utility

value and interest associated with integrating technology into future teaching practices. An additional promising and relevant area of research relates to the transmission of values from teachers to students through perceptions of instructional practices (Parrisius et al., 2020).

Attracting and retaining high-quality teachers is a current challenge, particularly in urban settings. As we demonstrate in this study, one avenue to resolve this problem is to advance a holistic perspective of preservice teacher motivation and costs in relation to desired outcomes such as persistence, aspirations, and satisfaction.

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Table 1
Scales, Psychometrics and Example Items

Sets for analysis	Construct	Alpha (No. of items)	Example item
Set A: Perceived socialization and prior experience ^a	Prior teaching and learning experiences	.853 (3)	I have had inspirational teachers
	Social influence	.822 (3)	My family thinks I should become a teacher
	Fallback career ^b	.712 (2)	I chose teaching as a last-resort career
Set B: Motivational perceptions (LPA variables)	Task demands ^c	.717 (6)	Do you think teachers have a heavy workload?
	Task returns ^d	.870 (8)	Do you think teaching is well paid?
	Self-perception of ability	.816 (3)	I have good teaching skills
	Intrinsic value ^a	.765 (2)	I like teaching
	Personal utility value ^e	.842 (9)	Teaching will fit with the responsibilities of having a family
	Social utility value ^f	.897 (13)	Teaching makes a worthwhile social contribution
	Effort cost	.960 (5)	Teaching requires too much effort
	Emotional cost	.931 (6)	Teaching is too stressful
Set C: Career satisfaction and planned commitment ^h	Opportunity cost ^g	.940 (8)	Teaching will require that I give up too many other activities that I value.
	Satisfaction with career choice	.937 (3)	How satisfied are you with your choice of becoming a teacher?
	Planned persistence	.961 (4)	How certain are you that you will remain in teaching?
	Planned professional development	.825 (4)	To what extent do you aim to continue learning how to improve your teaching skills?
	Leadership aspirations	.906 (4)	To what extent do you aim to take up a leadership role in schools?

Note.

^a *Social dissuasion* scale was dropped from analyses due to low reliability ($\alpha = .513$).

^b One item was dropped to improve reliability.

^c Second-order FIT-Choice factor consisting of *high demand career* and *expert career* subscales

^d Second-order FIT-Choice factor consisting of *social status*, *salary*, and *teacher morale* subscales

^e Second-order FIT-Choice factor consisting of *time for family*, *job security*, and *job transferability* subscales.

^f Second-order FIT-Choice factor consisting of *shape future of children*, *enhance social equity*, *make social contribution*, and *work with* subscales.

^g Aggregate variable based on Flake et al. (2015) *other task effort cost* and *loss of valued alternatives* subscales; see EFA results in text.

Table 2
Indices for Profile Selection

Model	AIC	BIC	Adjusted BIC	Entropy	LMR-LTR
1 Profile	15927.618	16007.641	15950.493	--	--
2 Profiles	15173.321	15297.802	15208.905	.800	762.468**
3 Profiles	14795.998	14964.935	14844.290	.812	391.253*
4 Profiles	14579.925	14793.320	14640.925	.825	232.466**
5 Profiles	14426.377	14684.229	14500.086	.832	170.897
6 Profiles	14329.323	14631.632	14415.740	.818	115.266

Note. LMR-LTR = Lo-Mendell-Rubin Adjusted Likelihood Ratio Test.

* $p < .05$

** $p < .001$

Table 3

Standardized Means and Standard Errors by Latent Profiles

	Profiles							
	(Percent of total sample)							
	1 (38.3%)		2 (31.6%)		3 (19.8%)		4 (10.3%)	
	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>
Task Demands	0.179	0.066	0.329	0.074	-0.529	0.102	-0.675	0.184
Task Returns	0.239	0.071	-0.100	0.087	-0.167	0.088	-0.268	0.131
Ability	0.633	0.056	0.147	0.076	-0.627	0.102	-1.638	0.149
Intrinsic Value	0.593	0.028	0.121	0.079	-0.348	0.120	-1.956	0.199
Personal Utility Value	0.076	0.081	0.172	0.077	-0.382	0.116	-0.070	0.111
Social Utility Value	0.584	0.049	0.218	0.068	-0.811	0.149	-1.284	0.141
Task Effort Cost	-0.654	0.036	0.858	0.122	-0.432	0.108	0.664	0.179
Opportunity Cost	-0.690	0.062	0.720	0.096	-0.316	0.111	0.996	0.119
Emotional Cost	-0.792	0.092	0.817	0.065	-0.174	0.115	0.828	0.101

Table 4

Estimated Marginal Means for Career Satisfaction, Commitment, and Aspirations by Latent Profile

	<i>M</i>	<i>SE</i>	95% CI Lower bound	95% CI higher bound
Profile 1				
Satisfaction with Choice	6.67	0.05	6.57	6.77
Planned Persistence	6.63	0.06	6.51	6.74
Leadership Aspirations	5.89	0.08	5.73	6.06
Planned Prof. Develop.	6.74	0.04	6.67	6.82
Profile 2				
Satisfaction with Choice	6.07	0.06	5.96	6.17
Planned Persistence	6.02	0.07	5.89	6.15
Leadership Aspirations	5.55	0.09	5.37	5.73
Planned Prof. Develop.	6.45	0.04	6.37	6.53
Profile 3				
Satisfaction with Choice	5.97	0.07	5.83	6.11
Planned Persistence	5.87	0.09	5.70	6.03
Leadership Aspirations	4.88	0.12	4.64	5.11
Planned Prof. Develop.	6.29	0.05	6.18	6.40
Profile 4				
Satisfaction with Choice	4.99	0.10	4.80	5.19
Planned Persistence	4.93	0.12	4.70	5.17
Leadership Aspirations	4.42	0.17	4.09	4.75
Planned Prof. Develop.	5.54	0.08	5.39	5.69

Table 5

Relations of Prior Experience, Social Influence, and Fallback Career to Class Membership

Independent Variable	Profile 2 vs. 1				Profile 3 vs. 1				Profile 4 vs. 1			
	<i>b</i>	<i>SE</i>	<i>p</i>	Odds Ratio	<i>b</i>	<i>SE</i>	<i>p</i>	Odds Ratio	<i>b</i>	<i>SE</i>	<i>p</i>	Odds Ratio
Prior Experience	-0.353	0.192	.066	0.700	-0.721	0.215	.001	0.486	-1.110	0.224	<.001	0.330
Social Influence	-0.351	0.186	.060	0.704	-0.906	0.253	<.001	0.404	-1.211	0.252	<.001	0.298
Fallback Career	0.938	0.214	<.001	2.554	0.605	0.381	.112	1.832	1.515	0.248	<.001	4.548

Table 6

Distribution of Race-Ethnicity, Gender, and Certification Level Across Latent Profiles

		Profile				
		1	2	3	4	Total
Race-ethnicity						
Asian/Asian-American	Count	31	57	27	30	145
	% within race	21.4%	39.3%	18.6%	20.7%	100%
	Std. residual	-3.4	1.7	-0.2	3.9	
Black/African American	Count	31	20	8	4	63
	% within race	49.2%	31.7%	12.7%	6.3%	100.0%
	Std. residual	1.3	0	-1.2	-1	
Latinx/Hispanic	Count	52	43	26	8	129
	% within race	40.3%	33.3%	20.2%	6.2%	100.0%
	Std. residual	0.3	0.4	0.2	-1.4	
White	Count	106	59	49	20	234
	% within race	45.3%	25.2%	20.9%	8.5%	100.0%
	Std. residual	1.6	-1.7	0.6	-0.8	
Multi-racial	Count	19	15	8	1	43
	% within race	44.2%	34.9%	18.6%	2.3%	100.0%
	Std. residual	0.6	0.4	-0.1	-1.6	
Total	Count	239	194	118	63	614
	% of total sample	38.9%	31.6%	19.2%	10.3%	100.0%
Gender						
Female	Count	191	158	83	41	473
	% within gender	40.4%	33.4%	17.5%	8.7%	100.0%
	Std. residual	0.5	0.6	-0.8	-1	
Male	Count	50	40	36	22	148
	% within gender	33.8%	27.0%	24.3%	14.9%	100.0%
	Std. residual	-1	-1	1.4	1.8	
Total	Count	241	198	119	63	621
	% of total sample	38.8%	31.9%	19.2%	10.1%	100.0%
Certification level						
Early childhood	Count	45	24	18	5	92
	% within level	48.9%	26.1%	19.6%	5.4%	100.0%
	Std. residual	1.4	-0.9	0.1	-1.3	
Elementary (Grades 1-6)	Count	79	57	28	15	179
	% within level	44.1%	31.8%	15.6%	8.4%	100.0%

	Std. residual	1	0.1	-1.1	-0.6	
Secondary (Grades 7-12)	Count	59	67	41	28	195
	% within level	30.3%	34.4%	21.0%	14.4%	100.0%
	Std. residual	-2.1	0.8	0.5	2.0	
Multiple levels	Count	54	40	29	11	134
	% within level	40.3%	29.9%	21.6%	8.2%	100.0%
	Std. residual	0.1	-0.3	0.6	-0.6	
Total	Count	237	188	116	59	600
	% of total sample	39.5%	31.3%	19.3%	9.8%	100.0%

Note. Bold font indicate aspects of distribution that make sizable contributions to chi square value and indicate substantial over- or under-representation of racial-ethnic group in the latent class

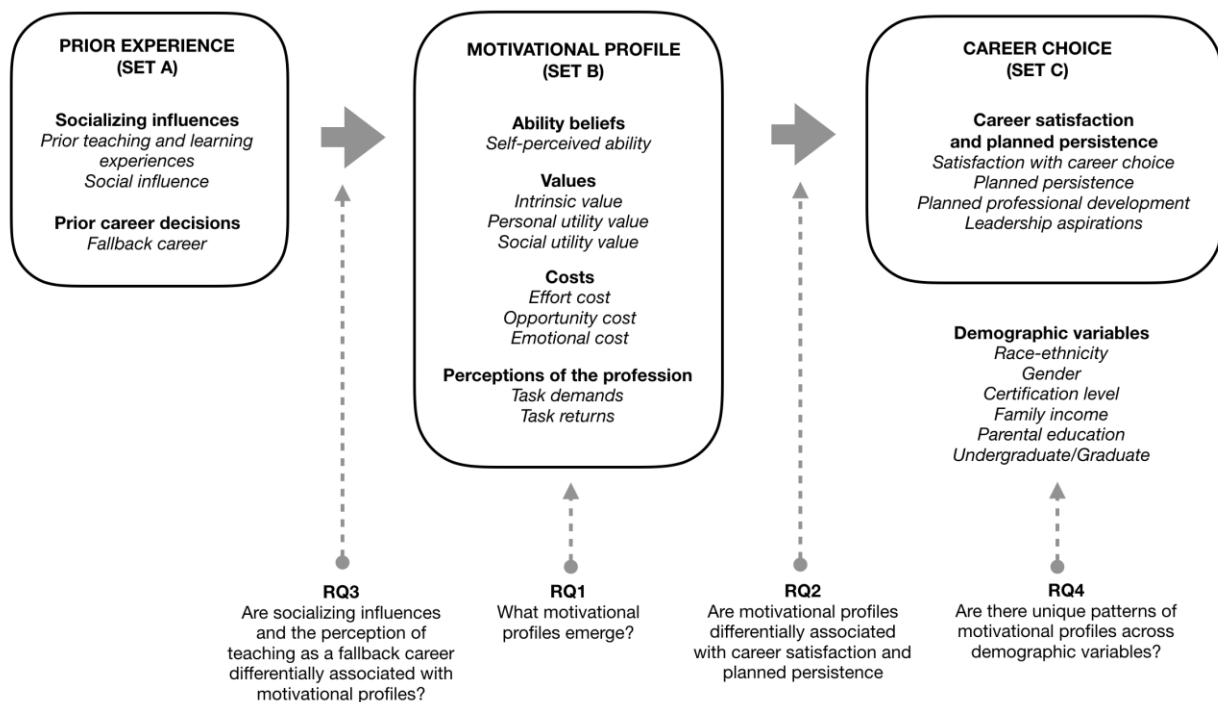
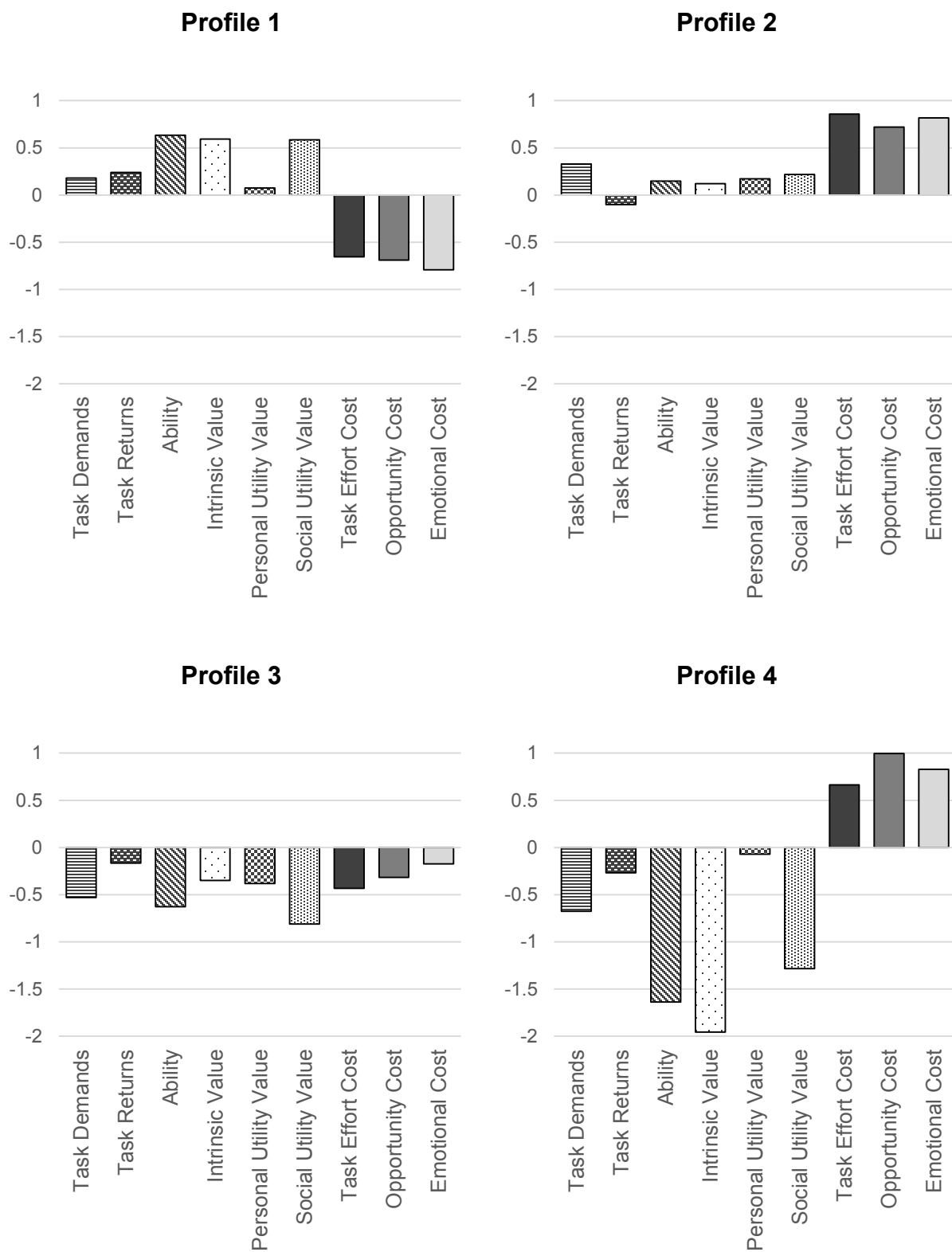


Figure 1. *Theoretical Model and Research Questions*

Figure 2. *Standardized Means by Latent Profiles*

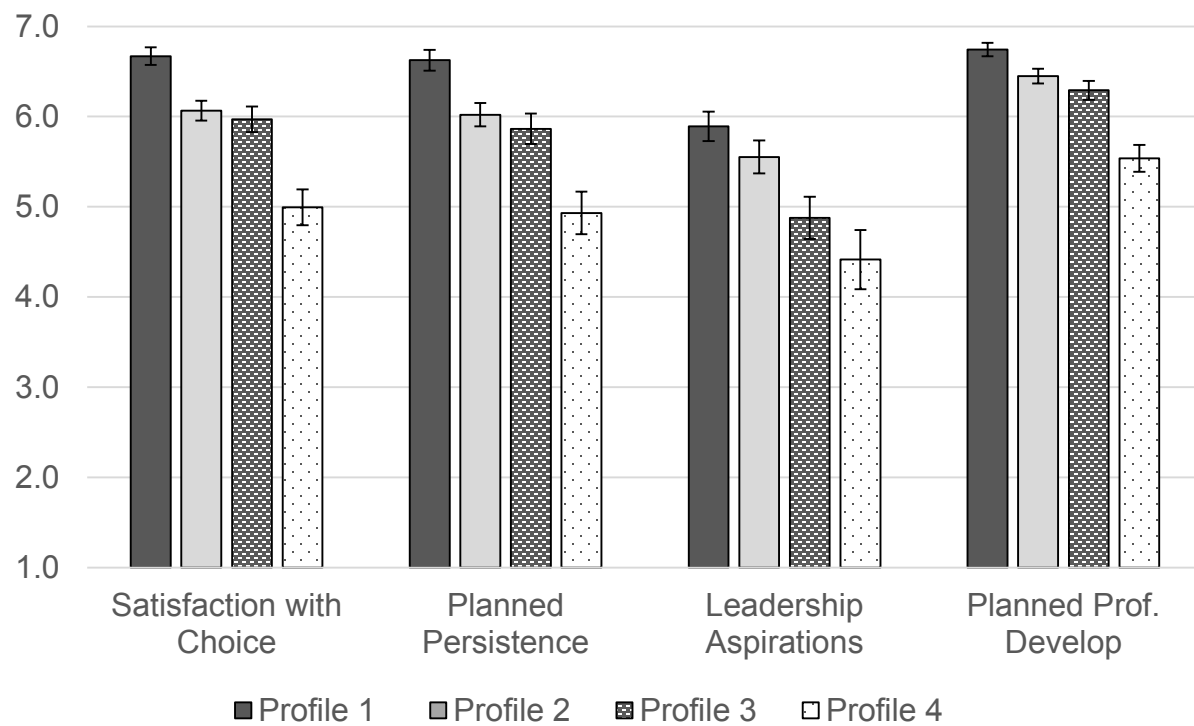


Figure 3. *Estimated Marginal Means and Standard Errors for Career Satisfaction, Commitment, and Aspirations by Latent Class.*