Do academic goal concordance and LIWC dimensions predict academic resilience? A fsQCA-based exploration

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Abstract

Goal concordance is often considered an influential factor in individuals' performance and success in several domains. However, its impact on academic resilience has been barely examined. In like manner, Linguistic Inquiry and Word Count (LIWC) is a commonly used tool in extracting psychological processes from a written language but it has not been used to extract language patterns about academic resilience. This study assumed that goal concordance and language patterns measured by LIWC dimensions play important roles in determining academic resilience. Recognizing the lack of evidence in this area, this study was conducted to fill the empirical gap. The data were collected from a sample of 36 college students who were enrolled in their desired college courses (academic goal concordant) and 36 who were not (academic non-concordant). All participants completed the academic goal concordance and academic resilience measures. Additionally, the participants wrote essays about how resilient they were in facing academic challenges. The language patterns in the essays were analyzed using the dimensions of LIWC. The role of academic goal concordance and LIWC dimensions on academic resilience was determined using fuzzy-set qualitative comparative analysis (fsQCA). Important findings were noted. First, goal concordance was a peripheral condition for academic resilience. Second, the analytic and authentic dimensions of LIWC as well as the total number of words used in the essay were found to be necessary conditions of high academic resilience. Lastly, five combinations were identified that resulted in high academic resilience. The implications of these findings are discussed.

Keywords: goal concordance, LIWC, text analysis, academic resilience, fsQCA

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1. Introduction

In the past decade, research on academic goal concordance in educational settings has consistently shown its critical role in academic success. Students who pursue academic goals that resonate with their values tend to have a sense of purpose and a high degree of motivation that enable them to navigate through challenges and maintain academic resilience (Gaudreau, 2012; Sheldon & Houser-Marko, 2001). Academic resilience is an essential factor that allows students to succeed in the demanding school environment. Previous studies consistently show that highly resilient students can endure and deal with heavy academic workloads, competitive environments, and academic stressors (Abubakar et al., 2021; Radhamani & Kalaivani, 2021). However, although the link between academic goal concordance and academic resilience is well-established in previous studies, there is a growing interest in using innovative methods to measure and analyze these constructs. The use of text analysis in extracting meanings and linguistic patterns through text is increasing. Linguistic Inquiry and Word Count (LIWC) is found to be one of the promising tools in this area. LIWC analyzes and quantifies various psychological, emotional, and cognitive states through written language. Because this tool can map the subtle indicators of students' goals, challenges, and emotional states (Boyd & Pennebaker, 2017; Tausczik & Pennebaker, 2010), it can also decode students' written language patterns that reflect academic resilience.

LIWC has been instrumental in exploring emotional experiences, personality traits, and social interactions, through linguistic patterns (Boyd & Schwartz, 2021). Due to its effectiveness, LIWC can also be equally valuable in understanding how individuals' language pattern reveals their resilience levels. Existing pieces of evidence suggest that a language pattern that demonstrates positivity, certainty, and focus on certain goals indicates self-concordance and resilience. In contrast, language pattern that reflects negative emotions such as doubt and stress suggests lower levels of goal concordance and resilience (Syah et al., 2019; Wu, 2024). However, despite these previous studies, there is a notable gap in the literature regarding the application of LIWC to examine language pattern related to students' academic resilience directly. Most studies in this area focused mainly on general psychological domains (Boyd et al., 2022; Fox & Royne Stafford, 2020). The goal of this study was, therefore, to not only fill the existing empirical gap but more so to provide further evidence that unlocks the significance of written language in sizing up academic resilience.

1.1 Significance of the study

This study is significant for several reasons, especially for the Philippine educational context. First, the current findings provide evidence of the role of choosing internally aligned academic goals on Filipino students' ability to successfully deal with academic challenges. Second, the current findings may be of great help to educators in assessing their students' level of academic resilience through text analysis. Third, given the limited studies in this area, the current findings shed light on the remaining gap in both local and international literature. Fourth, because this study might be the first to use LIWC in examining written language pertinent to academic resilience, the present results may provide an avenue for future similar endeavors. Lastly, the current findings can pave the way to a new way of understanding academic resilience.

2. Review of related literature

2.1 Academic goal concordance

Goal concordance, in general, refers to the pursuit of internally-aligned goals. In this study, academic goal

concordance is defined as the alignment between students' desired college courses and the actual academic major they are pursuing.

Previous studies considered goal concordance as one of the influential and strong predictors of motivation, well-being, and goal achievement. This contention is backed up by existing evidence in this area indicating that pursuing self-concordant goals not only results in greater persistence but also psychological benefits. Sheldon and Elliot (1999) argue that individuals who work on their goals that are aligned with their authentic interests exert more effort because the work itself makes them happy and satisfied. Recent studies have been consistently suggesting that goal concordance significantly influences various aspects of psychology and behavior. Wan et al. (2021), for instance, found that goal concordance broadly influenced mental health, emotion, willpower, cognition, and behavior. However, one recent study suggests that the link between goal concordance and mental health is not straightforward. Some cognitive factors might mediate this relationship (Sangeorzan et al., 2024). Nevertheless, the previous work of Sheldon et al. (2004) indicates that goal concordance poses universal benefits contending that people with self-concordant goals function optimally and have more positive emotions when pursuing activities they enjoy and believe in. Werner et al. (2016) added that working on a self-concordant goal is more effortless which in turn contribute to the attainment of such goal.

In the educational contexts, academic goal concordance has been closely linked to student motivation and academic success. Previous studies found that students with self-concordant goals were highly motivated greater academic outcomes (Gaudreau, 2012; Sheldon & Houser-Marko, 2001). This may strengthen the fact that pursuing a self-concordant academic goal will more likely result in favorable academic outcomes. Recent studies seemed to support this assumption suggesting that students with self-concordant academic goals achieved higher academic outcomes than their counterparts with nonconcordant goals (Lumontod, 2019). The impact of academic goal concordance does not only reflect on the academic outcome but also greater academic satisfaction and personal motivations (Gaudreau, 2012). Lastly, the academic self-concordant goal was found to have a significant influence on student academic resilience (Henry et al., 2023).

Despite the significance of pursuing concordant goals, it has not been fully explored in the local educational settings. To date, only a few studies barely scratched the surface of the existing gap in the local literature. Nonetheless, at least one study shows that students who pursued self-concordant academic goals tend to have higher and better academic performance than their counterparts who pursued non-concordant academic goals (Lumontod, 2019). However, the role of academic goal concordance on Filipino students' academic resilience has not been extensively examined. This area needs further studies that directly determine the predictive ability of academic goal concordance on academic resilience.

2.2 Academic resilience

College students' success in their academic endeavors depends on many factors. Academic resilience is one of them. Academic resilience is commonly defined as the student's capacity to function or perform optimally despite academic adversity. Recent studies consistently reveal the protective role of academic resilience against academic challenges. Seçer and Ulas (2020), for instance, showed that academic resilience alleviates students' issues such as negative school attachment and absenteeism. While most less resilient students experience poor academic outcomes, academically resilient students consistently achieve high academic performance (Radhamani & Kalaivani, 2021). The positive influence of academic resilience was also documented with socio-emotional skills. Wills and Hofmeyr (2019) found that academically resilient students showed greater socio-emotional skills than their less academically resilient counterparts. This seems to suggest that academic resilience not only provides a protective effect against academic challenges but also fosters broader socio-emotional development.

One of the focal points in the existing literature is that, although resilience is a generally favorable attribute, its level and manifestation can vary from one student to another. Personal and contextual factors might have

contributed to these differences. Recent studies showed that academic qualifications significantly predict academic resilience, not gender and educational streams (Pai & Sekhar, 2023). However, Abubakar et al. (2021) found that gender and year of study significantly influence academic resilience. This might further imply that while resilience is a broadly beneficial trait, its impact may be mediated or moderated by specific demographic and contextual factors. External support systems, for instance, may also play a significant role. These systems include family support, teacher support, and peer support (Duan et al., 2024). These support systems are crucial in helping students navigate academic challenges and maintain resilience. Shengyao et al. (2024) corroborate this contention suggesting that parenting style plays a significant role in shaping academic resilience, especially among younger students. Resilience training (integrating both personal and interpersonal factors) can also be beneficial for college students in cultivating and maintaining their academic success (Ang et al., 2021).

The influence of academic resilience transcends academic performance. Existing literature also shows the protective effect of academic resilience against students' academic stress. Previous studies indicate that academic resilience negatively influences academic stress (Kayun et al., 2023; Mulati & Purwandari, 2022). This negative relationship was also observed with broader psychological outcomes. Recent studies suggest that academic resilience negatively predicts school burnout (Romano et al., 2021; Tran et al., 2023). Moreover, academic resilience was found to have a positive predictive effect on emotional intelligence (Ononye et al., 2022), enjoyment of school, class participation, and general self-esteem (Martin & Marsh, 2006).

2.3 Linguistic Inquiry and Word Count (LIWC)

In recent years, there has been an increasing interest in the use of Linguistic Inquiry and Word Count (LIWC) in analyzing texts in different contexts (Chen & Huang, 2019; Essam & Abdo, 2021; Fox et al., 2020). Tausczik and Pennebaker (2010) argued that LIWC has excellent capability in detecting psychological dimensions including but not limited to attentional focus, emotion, social relationship, and thinking styles. Because an individual's language use is consistent over time, Boyd and Pennebaker (2017) contend that language-based measures can be more effective than traditional measures. Recent evidence suggests that the process of understanding human language is becoming more accurate which in turn can provide a clearer reflection of human thought, emotions, and behaviors (Boyd & Schwartz, 2021). This contention was found in an earlier study which showed that linguistic patterns used contain personality traits and social dynamics. Kacewicz et al. (2013), for instance, found that fewer first-person singular pronouns and more first-person plural and second-person singular pronouns are consistently used by people with higher social status. In this case, linguistic patterns could reflect social hierarchies. More recent evidence shows that language use in group communication can reveal the underlying group dynamics reflecting social structure and interactions (Kane & van Swol, 2023).

The use of LIWC extends to educational contexts. LIWC was shown to be a reliable measure that is capable of capturing students' emotional and perceptual experiences. A previous study found that LIWC dictionaries related to clout, authenticity, motives, and needs could potentially reveal students' subjective emotional experiences throughout daily school activities (Syah et al., 2019). Similarly, students' language use was linked to academic performance. Pennebaker et al. (2014) stated that students with higher academic grades tend to use more articles and prepositions. On the other hand, students with lower grades tend to consistently use auxiliary verbs, pronouns, adverbs, conjunctions, and negations, which indicate more dynamic, narrative language. Wu (2024) extends the previous study and found that simple LIWC word categories positively influence the composition performance of underperforming students, while complex LIWC word categories negatively impact their scores but have a positive impact on high-performing students. Given the reliability of LIWC in capturing students' psychological and perceptual experiences, this tool might be also capable of decoding and mapping the academic resilience through text analysis. However, the use of LIWC in the local educational settings remained limited, especially among college students. One study used LIWC in examining the signs of psychological issues from selected Filipino students' written language (Lumontod, 2020), but to the knowledge of the authors, no local studies were conducted to specifically determine the language patterns that reflect academic resilience. Thus, this area remained a fertile ground for scientific exploration.

2.4 Current study

In recent years, goal concordance has been extensively explored in many contexts. However, studies that examined its role in academic resilience remained scarce. Similarly, Linguistic Inquiry and Word Count (LIWC) has been effectively used both in clinical and social settings. However, its application in academic resilience is limited. In fact, to the knowledge of the authors, no studies were conducted and published in this area. Moreover, the combined predictive ability of academic goal concordance and LIWC dimensions has not been explored especially in the local educational setting. Considering this empirical gap, this study sought to unravel the significance of pursuing internally-aligned academic goals and written language as indicators of academic resilience.

3. Method

3.1 Design

The variables in this study were assessed through the following measures:

Academic Goal Concordance - Academic goal concordance was examined using a researcher-constructed item: Are you enrolled in your desired college course? This item was rated on dichotomous response options (yes or no). Students who were enrolled in their desired course were considered to have academically concordant goals. In contrast, students who were not enrolled in their desired college courses were considered to have academically non-concordant goals.

Academic Resilience Scale (ARS-30) – The Academic Resilience Scale (ARS-30) developed by Cassidy (2016) was used to quantitatively examine students' academic resilience. The ARS-30 measures three dimensions of academic resilience which include perseverance, reflecting and adaptive help-seeking, and negative affect and emotional response. However, this study only focused on the aggregate score, not on the individual subscales. Items are on a 5-point Likert scale response format ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Additionally, participants were asked to write an essay about academic resilience following this instruction: "As a student, please reflect on the academic challenges that you experienced so far and describe how resilient you were in facing those challenges. Give at least one example of those challenging situations and the steps you took to overcome them."

Linguistic Inquiry and Word Count (LIWC - 22) - The essays about academic resilience were quantitatively examined using the online version of Language Inquiry and Word Count (LIWC-22). This study only focused on the summary variable dimensions of LIWC which includes analytic (formal thinking) and authentic (unfiltered expression). Since the output of LIWC includes the total number of words (NoW) of the essay, NoW was then considered as one of the conditions or independent variables. LIWC computes the percentage of words used in the essay related to each dimension assessed. Both analytic and authentic dimensions have 0 to 100 values. The number of words was derived from the total word count of each essay.

3.2 Participants

The selection of participants involved several steps. First, approval from the Ethics Review Committee (ERC) was sought ensuring that the study followed ethical standards related to research involving human participants. Upon receipt of the approval, the data-gathering process commenced. Participants were purposively recruited through social media platforms and face-to-face interactions. This study focused only on college students from all courses and levels who enrolled in the academic year 2024-2025. This was to capture a wide range of perspectives pertaining to the concepts understudy. A combination of paper-and-pencil questionnaires and Google forms were utilized. The questionnaires were identical in both formats.

There were 297 college students participated in this study. 186 were female and 111 were male. Out of 297, 258 of them enrolled in their desired courses (had concordant academic goals). However, 12 were discarded due to a less than 100-word essay about academic resilience. As a result, the dataset for goal-concordant students was comprised of 246 participants. On the other hand, there were 39 students who participated who were not enrolled in their desired college courses (had non-concordant academic goals). However, 3 were discarded due to similar reasons resulting in a dataset with 36 respondents.   The large discrepancy in the sample size between the two groups was not appropriate when using fsQCA. To resolve this issue, a simple random sampling procedure was done from the 246 participants enrolled in their desired courses and randomly selected 36 cases to match the non-concordant group. As a result, the total number of participants in this study was 72 college students aged between 17 and 23 years old ($M = 18.86$, $SD = 1.36$).

3.3 Ethical considerations

All participants in this study were informed of the goals and nature of the current research. Their participation was purely voluntary and they maintained the right to withdraw before, during, and after participating. The anonymity and confidentiality of the gathered information were strictly observed.

3.4 Data analysis

The data were analyzed in several steps. First, descriptive statistics was used to gather information about the distribution of the participants according to their basic demographics as well as their level of academic resilience. Second, the numerical data obtained from LIWC dimensions including the total number of words of the essay were logarithmically transformed (Log^{10}). This was done due to the large differences of the values in these dimensions. Finally, to determine how academic goal concordance and dimensions of LIWC influence academic resilience, the fuzzy-set qualitative comparative analysis (fsQCA) method was conducted.

fsQCA is a set-theoretical that determines the influence or effect of multiple combinations of identified conditions on the outcome variable. The analysis is carried out using Boolean operation (Ragin, 2000). Unlike the symmetrical analysis methods, fsQCA does not focus on the strength and direction of the relationship, rather it accounts for the impact of certain combinations of antecedent variables on the outcome for each case in the dataset. This method sets fsQCA from traditional statistical techniques that only identify the aggregate influence of predictors on criterion variables losing the ability to determine the unique influence of those predictors on each case. Moreover, fsQCA employs a qualitative investigation with quantitative approach in determining the causes of certain outcome through configuration analysis. In the current study, academic resilience was the outcome variable that was assumed to be shaped by the complex combinations of conditions. The use of fsQCA allowed this study to identify the necessary and sufficient conditions that led to academic resilience. Conditions include data on goal concordance and LIWC dimensions.

Following the Boolean method, the data were calibrated. This study employed the direct method of calibration as suggested by Ragin (2009). The thresholds of qualitative anchors were determined which identified the structure of the fuzzy-set. These anchors include the threshold for full membership, cross-over point, and full non-membership that define the inclusion of cases and relevance of conditions. Normally, qualitative anchors have the following values; full membership (1), cross-over point (0.5), and full non-membership (0). However, researchers can set specific values for qualitative anchors based on their knowledge of the construct. In this study, since the data on academic goal concordance were dichotomous (1 = concordant; 0 = non-concordant), no calibration was needed. For academic resilience and LIWC dimensions, the minimum, mean, and maximum values were determined and considered qualitative anchors. This allowed for consistent calibration across conditions. The table below presents the variables with their anchor point thresholds of the fuzzy set.

Table 1

Variables explored and their corresponding anchor point thresholds

Name	Type	Abbreviation	Minimum Threshold	Crossover Point	Maximum Threshold
Academic Goal Concordance	Condition Variable	AGC			
Analytic	Condition Variable	A	0.08	1.46	1.93
Authentic	Condition Variable	Au	0.02	1.63	2.00
Number of Words	Condition Variable	NoW	0.26	2.35	2.99
Academic Resilience	Outcome Variable	AR	1.67	4.14	4.80

Note. Because academic goal concordance has 0 and 1 values, no calibration was applied.

This study used fsQCA 4.1 to analyze the combinations of conditions that resulted in the academic resilience of college students. The analysis was performed in three steps which include the necessity analysis, construction of the truth table, and configuration analysis. Several symbols were used to present the results of the analysis. The black circle (●) was used to denote the presence of the condition, while the crossed-out circle (⊗) denotes the absence of the condition. Moreover, the large circle represents core conditions while the small circle represents the secondary or peripheral conditions. Lastly, blank spaces represent a "do not care" situation which means a causal condition is either present or absent. Consistency measures how often the presence of the causal condition or combinations of conditions are associated with the expected outcome. Lastly, coverage measures how much of the expected outcome is explained by the causal condition or combinations of conditions.

4. Results and Discussion

The main goal of this study was to examine how academic goal concordance and LIWC dimensions affect the academic resilience of college students. The findings are indicated and discussed in the following sections.

4.1 The necessity analysis of the single variable

After the calibration process, the necessity analysis of a single condition was performed using fsQCA. The findings are reflected using two measures: consistency and coverage. As previously mentioned, consistency measures the degree to which a condition is a subset of the outcome variable. Coverage, on the other hand, measures how well a causal condition or combination of conditions explains the outcome. Both measures have 0 and 1 values. A consistency value of 0.9 indicates that a causal condition is necessary for the outcome variable to occur. As indicated in Table 2, analytic, authentic, and number of words had higher than 0.9 consistency values which suggests that the presence of these conditions reflects high academic resilience. Specifically, the analytic dimension of LIWC was found to be highly indicative of high academic resilience. In contrast, the absence of an analytic dimension is not a necessary condition for the absence of academic resilience. Moreover, the authenticity dimension was also found to be a necessary condition for high academic resilience. In the context of this study, this suggests that the authenticity dimension of LIWC is a good indicator of high academic resilience. The absence of this dimension is not a necessary condition for low academic resilience. Lastly, the results show that the number of words is necessary for academic resilience. In contrast, the absence of this condition is not a necessary condition for the low level of academic resilience. Moreover, academic goal concordance was found to be a less likely candidate for a good predictor of high academic resilience. The absence of academic goal concordance is not necessary for lower academic resilience. In sum, analytic, authentic, and the number of words are necessary conditions for high academic resilience. These conditions are good indicators of academic resilience among college students. However, the absence of these conditions does not strongly influence the lower level of academic resilience.

Table 2

Necessity test of single condition variable

Condition variable	Consistency	Coverage
Academic Goal Concordance	0.539	0.639
~Academic Goal Concordance	0.461	0.577
Analytic	0.934	0.964
~Analytic	0.420	0.743
Authentic	0.961	0.929
~Authentic	0.441	0.728
Number of Words	0.960	0.974
~Number of Words	0.475	0.725

Note. ~Indicates absence of a condition.

Table 3 presents the results of fsQCA analysis focusing on parsimonious and intermediate solutions. The findings identified five configurations that resulted in high academic resilience. For the parsimonious solution, the analytic, authentic, and number of word dimensions were identified as crucial factors. The high degree of consistency suggests that this combination fully explains the outcome variable. This implies that combining these conditions accounts for nearly all cases of high academic resilience.

The intermediate solutions reveal more detailed pathways to academic resilience. The combination of conditions such as academic goal concordance, analytic, and number of words accounts for about 49.05% of cases. Another identified pathway is the combination of analytic, authentic, and number of words which accounts for a significant proportion of cases. However, some pathways have included the presence and absence of conditions that lead to the outcome. Overall, the intermediate solution suggests that these pathways or combinations are strong predictors of high academic resilience.

Table 3

Parsimonious and intermediate solutions

Measure	Path of Solutions	Raw Coverage	Unique Coverage	Consistency
	Analytic	0.934	0.005	0.964
Parsimonious	Authentic	0.961	0.015	0.929
	Number of Words	0.960	0.010	0.474
Solution Coverage: 0.997				
Solution Consistency: 0.913				
Intermediate Solution	AGC*A*NoW	0.491	0.012	0.993
	A*Au*NoW	0.891	0.214	0.995
	AGC*A*~Au*~NoW	0.204	0.008	0.963
	AGC*~A*~Au*NoW	0.204	0.007	0.986
	AGC*~A*Au*~NoW	0.214	0.009	0.974
Solution Coverage: 0.928				
Solution Consistency: 0.980				

Note. The complex solution is not included in the table because only parsimonious and intermediate solutions were used in identifying core and peripheral conditions.

4.1.1 Analytic plus number of words

Table 4 indicates the configurations that predict high academic resilience. The first configuration shows that academic resilience can be identified with a high frequency of analytic and the number of words in essays regardless of authentic dimension. This also indicates that the academic resilience of some students can be identified with analytic and the length of their essays. Longer essays that contain analytical-related words can be indicative of high academic resilience.

4.1.2 Analytic, plus authentic, plus number of words

The second configuration was also identified as a reliable predictor of academic resilience. This suggests that students with high-frequency usage of analytic, authentic words, and longer essays had high academic resilience. This may suggest that longer essays that contain more analytic and authenticity-related words can be

indicative of high academic resilience.

4.1.3 Analytic subtract authentic and number of words

The third combination indicates that the presence of analytic and the absence of authentic, and number of words in the essay contributes to some instances of academic resilience. This combination, however, is not as strong as other pathways. Nevertheless, in this study, the high-frequency usage of analytic words alone could reflect the high level of academic resilience of some students.

4.1.4 Number of words subtract analytic and authentic

The fourth combination indicates a valid path but only accounts for fewer cases. It suggests that for some students in the sample, the length of the essay alone may indicate high academic resilience. The longer the essay the more it may reflect high academic resilience.

4.1.5 Authentic subtract number of words and analytic

The fifth configuration has a moderate contribution to explaining cases of academic resilience. This suggests that high-frequency usage of authentic words and absence of analytic and number of words may indicate a high level of academic resilience. This combination suggests that in some students, authentic related words in the essay can be indicative of academic resilience.

Table 4

Configurations with academic resilience

Path	Conditions				Raw Coverage	Unique Coverage	Consistency
	AGC	A	Au	NoW			
AGC*A*NoW	●	●		●	0.491	0.012	0.993
A*Au*NoW		●	●	●	0.891	0.214	0.995
~AGC*A*~Au*~NoW	⊗	●	⊗	⊗	0.204	0.008	0.963
~AGC*~A*~Au*NoW	⊗	⊗	⊗	●	0.204	0.007	0.986
AGC*~A*Au*~NoW	●	⊗	●	⊗	0.214	0.009	0.974

Solution Coverage: 0.928
Solution Consistency: 0.980

Generally, the results show that academic goal concordance appeared to be a peripheral condition within the five configurations that resulted in academic resilience. In other words, academic goal concordance is not a necessary condition for high academic resilience. This might further suggest that pursuing college courses that are not aligned with students' desires may not necessarily impair their ability to endure academic challenges. This assertion partially contradicts previous findings in this area. Existing pieces of evidence suggest that pursuing self-concordant goals is related to greater persistence (Sheldon & Elliot, 1999; Wan et al., 2021). It is important to note, however, that most previous studies in this area were conducted outside of the academic context. Thus, it remains unclear whether those findings can be applied to academic settings. Also, some studies in the academic context did not directly explore the link between academic goal concordance and academic resilience but academic performance (Gaudreau, 2012; Lumontod, 2019). To date, only a few empirical efforts (e.g., Henry et al., 2023) examined how pursuing self-concordant goal impact academic resilience. The peripheral role of academic goal concordance found in this study indicates that this condition is not a strong predictor of high academic resilience. Other factors are needed for high academic resilience to occur. This might also point to the fact that academic resilience is a multifaceted construct that is explained by several combined factors (Masten, 2019; Southwick et al., 2014). Perhaps, students can be inherently academically resilient regardless of whether they pursue an internally aligned academic goal or not. However, it is also possible that the absence of a significant effect of academic goal concordance on academic resilience was primarily due to how the current study measured academic goal concordance. As indicated in the previous section, goal concordance

was assessed through a straightforward statement by asking students whether or not they were enrolled in their desired college courses. Such simplicity might have failed to capture the accurate essence of academic goal concordance as a multifaceted construct. In turn, this limitation might have impacted the current findings. Future research in this area may fill this gap by measuring academic goal concordance using different methods quantitatively or qualitatively.

Moreover, the fsQCA analysis results showed that LIWC dimensions (analytic and authentic) and the total number of words in the essay were necessary conditions for high academic resilience. In other words, students who wrote more analytic and authenticity-related words and longer essays about academic resilience tend to have higher scores on the academic resilience scale. It can be argued then that these conditions are reflective of high academic resilience in the current sample. This supports previous findings which suggest that LIWC can be a valuable tool in extracting meaning from a given text (Essam & Abdo, 2021; Fox et al., 2020). LIWC usage can be more beneficial in instances wherein using traditional measures is impaired by methodological challenges. Because language is consistent (Boyd & Pennebaker, 2017), the meaning it conveys offers a window for an individual's behavioral and psychological tendencies. In an academic context, this can also be plausible and noteworthy. Previous studies show that LIWC was able to capture students' emotional experiences (Syah et al., 2019; Wu, 2024). These corroborate with the current results suggesting that LIWC dimensions reflect academic resilience. But again, this does not discard the fact that although LIWC is an objective analytical tool, it cannot promise accurate results. In the context of the current study, the essay from which the LIWC findings were derived might not wholly reflect the level of academic resilience of the respondent students. Students' narratives might have been influenced by other factors unaccounted for in this study. This includes the fact that English is not the native language of the respondents. Some students might have struggled to put their internal experiences into words. As a result, the essay might not entirely indicate the degree of academic resilience that the respondents truly had. Despite these inherent limitations, the current findings offer valuable insights into how written language can be examined using text analysis. It can be argued that LIWC is a useful tool that can be applied to different academic domains (Pennebaker et al., 2014). The present results offer valuable pieces of preliminary evidence for future studies as to how academic constructs be examined.

Overall, there were five combinations identified that resulted in high academic resilience. However, only the total number of words in the essays appeared in three out of five combinations. This condition, therefore, is a strong predictor of high academic resilience. In the context of this study, students who wrote longer essays tend to have higher academic resilience. This is plausible because writing is a tedious task that often bores most students. Resilient students, due to their inherent capability to endure challenging tasks were tenacious enough to describe their experience in more detailed writing. The raw data confirmed this observation. Several responses were excluded from the dataset because they were less than 100 words. LIWC requires more words to establish meaningful analysis. Also, during the data gathering, it was observed that many respondents were reluctant to respond to the essay part of the questionnaire perhaps due to two possible reasons; the tedious nature of essay writing and the language barrier. Although the respondents were college students, English is not their native language which may pose a challenge in capturing the accuracy of the obtained data. It could be that the words being used might not exactly reflect the respondents' true level of academic resilience. These issues might have impacted the gathered data and therefore comprise their accuracy and generalizability.

It is also equally important to note that the absence and presence of analytic, authentic, and total words in the essay contribute to high academic resilience.   As indicated in Table 4, in some cases, academic resilience occurred when at least one of these conditions was present even if other conditions were absent. Aside from the LIWC dimensions examined in this study, some contextual and personal factors might have shaped academic resilience. For instance, some students might be inherently resilient. Thus, regardless of whether or not they were enrolled in their desired courses, they are capable enough of enduring academic challenges. Additionally, the Filipino culture might have largely contributed to students' resilience. Filipinos are known for being resilient through their strong faith (Hechanova et al., 2015), resourcefulness (Adviento & De Guzman, 2010), and sense of humor (Ladrido-Ignacio, 2011). These are a few of the identified protective factors that allow Filipinos to

navigate challenges in life. These factors might also have contributed to the level of academic resilience found in this study. These contentions, however, were not directly examined in this study. Further research might be needed to test this assumption.

Taken together, the current findings suggest several important implications. First, higher scores in the analytic LIWC dimension may reflect problem-solving, self-regulation, and metacognitive awareness which in turn indicates a structured and logical approach to thinking that aligns with common traits of highly resilient students (Pinar et al., 2018). Second, higher scores on the authentic dimension of LIWC might be indicative of emotional openness. As a result, students who expressed themselves authentically were able to acknowledge their emotions and sustain their motivation through meaningful goals. Third, a higher word count of essays reflects greater effort, persistence, and engagement. These traits are crucial for navigating academic challenges. Additionally, a longer word count of the essay may indicate cognitive flexibility and confidence in expressing oneself allowing for a student to articulate his or her ideas in depth. Lastly, the combined impact of these conditions on academic resilience accentuates the balance between emotional regulation and logical reasoning, both may underpin resilience among students. However, given the dynamic and multifaceted nature of academic resilience, further research on how different configurations of emotional, cognitive, and motivational factors contribute to resilience will enhance the current understanding in this area.

5. Conclusion

In sum, the fsQCA findings reveal that academic goal concordance was a peripheral condition for academic resilience. Additionally, the findings show that the analytic and authentic dimensions of LIWC and the total number of words in the essay were necessary conditions for high academic resilience. Moreover, there were five configurations identified that resulted in academic resilience. Analytic and total number of words of the essay appeared in three of those five configurations indicating that these dimensions were strong predictors of high academic resilience. These findings may have important implications for teachers and students. Teachers may use text analysis to better assess their students' ability to navigate academic challenges while students may benefit from engaging in writing tasks and making them tools for self-reflection and growth.

5.1 Limitations and recommendations for future studies

Although this study provides novel insights, it comes with several limitations. One important limitation is the small sample size. Although fsQCA works well with small sample sizes, more cases may improve the accuracy of the findings. Additionally, the use of fsQCA may benefit from integrating traditional symmetrical statistical methods such as multiple regression and structural equation modeling (SEM). This can help determine how much of the variance of the dependent construct is explained by which predictor(s). Moreover, although LIWC is a robust measure of psychological factors, it faces challenges when used in non-English speaking populations. In this study, for instance, the language barrier is one of the hurdles in capturing the accuracy of the data measured. The difficulty in putting one's internal experience into words might have influenced the trajectory of the LIWC results. Future research may use stringent criteria in selecting the respondents that include the proficiency in English language. A qualitative (interview) approach could also foster the reliability of the results. Lastly, this study did not take into account students' courses and levels. These factors might have also shaped their academic resilience. Future studies could explore these factors and their potential impact on students' resilience.

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