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Designing a measurement scale for student engagement motivation in higher education

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ABSTRACT

This research aims to present comprehensive literature on student engagement motivation (SEMo) from specific perspectives to develop a scale measuring its domain. This study will first show the context and need for this research in Vietnam, as well as explore the factors and results of previous studies that have been undertaken meticulously. In addition, it provides a definition and aspects of the elements that constitute SEMo in this research context. Finally, to measure these domains, setting up a scale for SEMo is indispensable. As a result, the motivations of consumers to participate in the SEMo were Career orientation, Financial relevance, Self-enhancement, Memorable emotion, and Meaningful behavior. After a scale development procedure, a 30-item instrument representing four domains of a SEMo was shown to be reliable and valid. The study provides a standardized scale for researchers to measure motivation for engagement, facilitating exploration and comparison across different contexts. Additionally, it emphasizes the interaction between students and educational administrators, suggesting potential applications for educational program design in higher education institutions.

Keywords: student engagement motivation, educational policy, curriculum design, financial relevance, memorable emotion

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INTRODUCTION

It is no exaggeration to say that education plays a vital role in the future of a nation. Education is also regarded as a top national policy and a driver of economic development. This strategic role has been empirically proven. There is an increase in the proportion of the highly educated population that correlates positively with Gross Domestic Product (GDP) growth and poverty alleviation, particularly when participation rates reach a critical mass (Li et al., 2024). Higher education, in particular, holds a crucial role in training and providing high-quality human resources. These human resources will subsequently serve as an essential foundation for a knowledge-based economy and possess a competitive advantage at the national level (Chen & Shih, 2025). However, more than merely a conduit for economic output, higher education institutions also serve as key pillars in achieving the Sustainable Development Goals (SDGs) and enhancing social mobility (Mashwama & Thwala, 2025).

However, reality demonstrates that universities currently face a series of complex challenges. These challenges originate from both internal and international spheres and possess the potential to hinder the realization of the university's strategic role. At the global level, higher education institutions in developing countries grapple with issues of unequal internationalization, ambiguous policies, funding shortages, and the threat of brain drain (Moshtari & Safarpour, 2023). On the other hand, the rapid expansion of the higher education system, if not managed effectively, risks creating a mismatch between graduate qualifications and labor market demands. This, ultimately, may trigger educated unemployment and conversely suppress economic growth

(Tian & Kenayathulla, 2025; Rezaei & Shahab, 2025). Domestically, challenges also arise from the increasing variety of institutional choices for prospective students. This condition creates intensifying competition; thus, attracting and retaining student numbers has become an urgent issue to consider for the sustainability of a university. Consequently, educational administrators are required not only to focus on improving academic quality but are also to deeply understand the motivations that drive student engagement with their institution.

Numerous studies within the Indonesian higher education context indicate that student engagement is not solely influenced by institutional structural factors. However, there are also other factors; These factors include instructional designs that encourage active participation and self-directed learning readiness. For instance, a study conducted by Winantaka et al. (2025) concerning the implementation of the flipped classroom in Business English courses. This research demonstrates that students involved in a learning process that requires pre-class preparation possess higher levels of motivation, learning efficiency, and satisfaction (Winantaka et al., 2025). These findings indicate that student engagement is multidimensional, encompassing cognitive, affective, and behavioral aspects that are interrelated with motivational factors. With this fundamental understanding, the next step, which is equally important, is to conduct systematic measurements. Measurements are carried out on students to ascertain these engagement motivations. Furthermore, the availability of valid and reliable measurement tools to assess this engagement motivation has become an absolute necessity.

On a domestic level, these complexities are being amplified by an increasingly saturated market of higher education providers. As prospective students face an overwhelming array of institutional choices, universities find themselves in a high-stakes race for recruitment and long-term retention, factors that are now vital for institutional survival. This shift necessitates a change in leadership priorities; administrators can no longer afford to focus solely on academic benchmarks. Instead, there is an urgent demand to look “under the hood” at the specific motivations that anchor a student to their institution. However, simply acknowledging these motivations is insufficient. The scholarly and practical challenge now lies in how we quantify them, making the development of psychometrically sound and context-specific measurement tools an absolute imperative in the current educational climate.

At present, in developed countries, various tools for measuring student engagement (SE) have been extensively developed. However, empirical studies specifically adapting or developing SE instruments, as well as cross-cultural validations conducted in developing countries, remain relatively limited (Assefa et al., 2025). In fact, recent research indicates that context is critically important. Learning conditions, resource challenges, and students' learning goal orientations in developing countries can differ significantly from those in developed countries. Based on this, instruments that are sensitive to the local context are required. Furthermore, SE research has historically focused on mapping dimensions (such as behavior, emotion, and cognition), identifying antecedents, and examining consequences for academic achievement (Reeve et al., 2025). In other words, the focus has been on what engagement is and its effects, rather than on identifying and measuring the underlying motivation for engagement itself. Although some studies confirm that motivation, such as self-concept, task value, and self-regulation, acts as an important mediator (Singh et al., 2022), holistic instruments that measure “engagement motivation” as a standalone construct, particularly in the context of public schools in developing nations, are still rare.

This gap is also evident in existing literature, which largely highlights school choice (Fang & Wang, 2014), learning outcomes (Suárez-Orozco et al., 2009), or reasons for dropping out (Fall & Roberts, 2012). To address this gap, this study aims to: (1) explore students' psychological processes to determine the multidimensionality of their motivation to engage with public schools, and (2) develop and validate an instrument to measure that motivation. This approach aligns with calls to accommodate new dimensions and socio-cultural contexts in student engagement studies outside the Western world (Assefa et al., 2025; Berhanu et al., 2025).

In summary, a review of the literature shows that most academic work on SE in higher education focuses on identifying factors influencing school choice (Fang & Wang, 2014), the impact on learning outcomes (Suárez-Orozco et al., 2009), or reasons for student attrition (Fall &

Roberts, 2012). Research on motivation for SE aimed at increasing student happiness and dedication remains scarce. Most previous studies have yet to develop a complete set of tools to measure the specific motivation that drives engagement with educational institutions, especially public schools. Therefore, this study seeks to answer: (1) What motivates students to engage with public institutions, and (2) what tools can be used to measure this motivation?

METHOD

Two common methods commonly used in research are qualitative and quantitative research. Therefore, based on the research purpose of determining the concept and motivations of SE, this study used both qualitative and quantitative methods. In it, a qualitative method is carried out through the evaluation of relevant research and interviews with students studying at the school to discover students' motivations when engaging with a particular educational institution. Based on the results of qualitative analysis, the initial concept of SE motivation and its basic aspects were created.

After identifying aspects of the SE motivation structure, based on a review of related literature and the results of in-depth interviews, an initial group of items was created to clarify engagement motivation of students. Finally, data were collected from students and analyzed to screen, validate, and validate aspects of SE motivation using quantitative methods in follow-up research. Specifically, the scale to measure SE motivation was developed based on the research framework of Churchill (1979), with seven stages of development as follows: Stage 1, determines the motive. Determining student engagement motivation is done through an overview of relevant studies. Then a number of students studying at the university were interviewed to ensure the content validity of these motives. Stage 2, create items. The items were created based on two processes: one was derived from the free-thinking interviews of some students studying at the university and the other was the evaluation of research related to engagement motivation of students. Stage 3, preliminary assessment of the above items. Several lecturers and students were invited to assess the representativeness of items for each engine using a 7-point Likert scale.

Stage 4, data collection. Only students studying at public University are eligible to participate in this survey. Stage 5, screening the scale for the first time. Many measures are taken to purify this scale through testing the Cronbach alpha coefficient and total variable correlation, exploratory factor analysis, determining factor analysis, and validity assessment. Stage 6 evaluates the scale a second time, the scale is further refined based on the scale refined in stage 5 using a different sample. Stage 7 deals with evaluating the validity of the refined scale. The validity of the scale was established by testing the validity against the nominal value and discriminating by assessing the correlation between the student engagement motivation scale and other correlated scale parties.

In the context of training services, the interaction between students and the school has an impact on service quality. A training institution can maintain SE and expect them to continue recommending it to others when it meets their desires and awakens new energies in them. In this respect, the present study evaluated items that were developed that were supposed to assess the motivation behind SE.

Samples are taken from students who have been studying at public universities in the Da Nang area. According to Ferber (1977), the student sample is considered valid under two conditions, the research is exploratory and the items of the scale are suitable for the respondents. The current study met both conditions. As the present study is a first attempt to develop a more complete measure of SE motivations with a public school, it can be considered exploratory. Moreover, tuition fees and many incentives in the learning process, future study and career opportunities, and social recognition are seen as relevant items for students.

FINDINGS AND DISCUSSION

Findings

Results from the interviews

In addition to evaluating related studies to synthesize factors that play a positive role in SE, interviews with students studying at public schools were also conducted to check the results. Results from the literature review and identify new items relevant to the specific context in Vietnam.

Five-five students were interviewed in depth to ensure the content value for the above SE motivation structures, leading to an interesting result, that is, the interview results confirmed the cohesion of the students. Students with public schools mainly derive from five main motivations including career orientation, financial suitability, self-improvement, memorable emotions, and meaningful behavior. Most of these motivations represent clear goals for students when they decide to stick with their school. Students want more opportunities to continue their studies in an international environment or easily find a job (career orientation), cost-effective (cost-suitability), and at the same time, they also want to be recognized by others (improve self-efficacy). In summary, the analysis of interview results shows that, while extrinsic motivation creates existential values, intrinsic motivation brings sustainable and renewable values to engaged students.

The items in this study were drawn from in-depth interviews with students at the university and through a review of the results of previous studies. Specifically,

First, through the technique of free-thinking, 90 ideas were generated for the 5 motives derived from student interviews at the school. Specifically, 30 students in the school were prompted to write down their thoughts and feelings related to their attachment to the school. Based on these results, a researcher and a coder analyzed the contents of thought lists to uncover specific ideas that might resonate with students. The work was conducted independently and classified these ideas according to the above 5 groups of motives, resulting in the researcher identifying 55 specific ideas, while the programmer identified 52 specific ideas. So, a discussion between the programmer and researcher took place to analyze this difference. As a result, a total of 40 items were identified.

In the second phase of item creation, the researcher evaluated the scales by reviewing previous studies to gather items for five motivational, career-oriented groups (Suryadi et al., 2018), financial stress (Halliday-Wynes & Nguyen, 2014), life meaning (Strine-Patterson, 2017), emotion (Roberts & Davenport, 2002), self-enhancement (Klein et al., 2024). The result of this process was a collection of 25 items in five dimensions. Thus, a total of 65 items has been developed.

Then, the researcher and a lecturer with expertise in scale development independently reviewed the above 65 items and removed problematic items such as duplicates and similarities. Finally, 52 items were developed, improved were considered suitable to use for purifying scale, including career orientation 11 items, financial relevance 11 items, meaningful behavior 12 items, self-enhancement 10 items and memorable emotions 8 items.

Collection of data

The data collection to scale up included a survey of Vietnamese public-school students. The questionnaire used to collect data included 52 items on SEMo measures. As a result of distributing 600 questionnaires, 550 questionnaires were completed and judged to be available with a valid response rate of 91.67%. Due to the repetitive nature of the scale tablets, the entire sample was randomly divided into two subsamples, specifically, sample 1 (285 respondents) was used to perform factor analysis for the purification of the scale. The data from the remaining 265 subjects (Sample 2) was then used to confirm the scale.

Primary data analysis-scale purification

In order to identify the reliability of components and confirm the dimensionality, it is necessary to perform internal consistency analysis and factor analysis (sample n= 285). Evaluation of item-to-total correlation and Cronbach's Alpha resulted in 15 items being eliminated, leaving 37 items.

In order to confirm the psychological properties of 37 items that had undergone the first scale refining, a confirmatory factor analysis (CFA) was conducted using AMOS20 to confirm the reliability and validity of the scale. The results are displayed as shown in Table 1.

Table 1. Summary of Reliability test (sample 1)

Construct	No. of items	Parameter estimate	t-value	Cronbach's Alpha	CR	AVE
OR	8	.676 - .839	12.644 -16.497	.920	.919	.589
FR	7	.689 - .966	15.202 -31.597	.941	.940	.693
SEF	7	.503 – .905	9.045 - 2.302	.892	.893	.550
MB	8	.728 - .801	12.765 -15.956	.923	.925	.606
ME	7	.643 – .759	15.258 - 2.302	.873	.875	.502

As shown in Table 1, when Cronbach's Alpha exceeds .7 and the average variance extraction (AVE) is more than .50 (Fornell & Larker, 1981) as a whole, each item properly represents the concept.

Several fit indices were used to identify the structure of the measures: Chi-Square = 2.814(P = .000), and RMSEA = .08, TLI = .841, CFI = .853, IFI = .8533, RMR = .071, GFI = .767. Previous studies recommend using multiple indices together, rather than judging the model's goodness of fit by specific indices (Stevens, 2002). In conclusion, considering the various fit indices, the data were judged to need to improve for the model when the high RMSEA, RMR and low GFI.

Table 2. Discriminant validity test (sample 1)

Construct	FR	OR	MB	SEF
FR	.693			
OR	.006	.589		
MB	.097	.176**	.606	
SEF	.030	.221***	.563***	.550
ME	.027	.192**	.445***	.308***

Examination of the standardized residual matrix shows that some items should be discarded. The higher the number of residuals greater than ±2.58, the less suitable the research model is (Kline, 2012). So, for the current model, there are 26 normalized residuals that exceed the ±2.58 threshold value. Because these highly normalized residuals indicated a problem with items in the set factors, items that caused abnormally high normalized residuals were detected and eliminated. As a result, seven problematic items were removed. The toolkit is adjusted to 30 items (Model 2) and recommended for further analysis and evaluation.

Analyze additional data to determinde scale

As a result of confirmatory factor analysis by the first sample (n = 285), it was first confirmed that the measurement tool is a means of reliability and validity. However, this was due to only one sample, and in order to confirm the result once more, the need for further analysis by another second sample (n = 265) emerged. Accordingly, a new confirmatory factor analysis was conducted using the second sample (n = 265) for items whose reliability and validity were verified through previous analysis.

Table 3. Summary of reliability test (sample 2) (n=265)

Construct	No. of items	parameter estimate
MB	7	.734~ .823
OR	6	.702~ .894
FR	6	.688~.925
ME	6	.696 ~ .762
SEF	5	.611 ~ .815

Note: Chi-Square=2.467(p=.0). RMSEA=.075. TLI=.875. CFI=.886. IFI=.887. RMR=.073. GFI=.813

The result of analysis by the second sample is shown in <Table 3>, the data fit the model as a whole. In addition, Cronbach's Alpha also exceeded the reference point (.7) (Fornell & Larker, 1981) with .859 to .922 in all four dimensions, and the composite reliability was also acceptable at .7 (Fornell & Larker, 1981) with .895 to .949. The average variance extraction (AVE) is also .528 to .665, which is higher than the standard value of .5, indicating that the ratio of explaining common variables is higher than unique variables.

In order to verify the discriminant validity of the second sample, the standard deviation and confidence interval of each study concept were verified. However, except that the correlation between some concepts was rather high, the discriminant validity was obtained because the confidence interval was not included 1. Judging Also, it was confirmed whether the AVE of each variable was greater than the product of correlations among variables, and some of them showed problems in discriminant validity. However, considering the number of combinations that were identified as a whole, it was judged that there was no great difficulty in securing the discrimination validity between the constituent dimensions of the motivation structure of SE (Table 4).

Table 4. Discriminant validity test (sample 2)

Construct	MB	OR	FR	ME	SEF
MB	.626				
OR	.209**	.665			
FR	.015	.003	.624		
ME	.383***	.179*	.015	.528	
SEF	.538***	.214**	.006	.351***	.552

In addition, the squared correlation between any two structures is less than the AVE for each, indicating that the structures below the scale are distinct from each other.

Finally, verification of the nominal value can be demonstrated by confirming that there is a significant correlation with other measures (i.e. constructs) that are thought to be involved (Churchill 1979). In other words, understanding validity confirms whether the proposed concept makes theoretical sense and relates to other constructs as expected. This study proposes the concept of motivation for SE including Career Orientation (Suryadi et al., 2018), Financial Pressure (Fosnacht & Dong, 2013), interpersonal impact (Steger et al., 2008), emotional attachment (Dogan, 2016), and meaning of life (Nguyen et al., 2018). A result of analysis is shown in Table 5. It was confirmed that there is a significant correlation between each component of the engagement motivation and other external measurements. As a result of this empirical analysis, it could be confirmed that 'motivation of SE had a validity of understanding.

Table 5. Test of nomological validity

Construct	MB	OR	FR	ME	SEF
Meaning of life	.229*	.262**	.360**	.236*	.384*
Career Orientation	.437*	.380**	.267	.366**	.205*
Financial Pressure	.258*	.127**	.361*	.243**	.354**
Emotional attachment	.325**	.154*	.265**	.234*	.252**
Interpersonal impact	.135	.254*	.363*	.137**	.326

Note: **p<.01(significant at .01); *p<.05 (significant at .05)

Discussion

This study was conducted to explore the fundamental motivations influencing students' decisions to engage with public universities, following the scale development process established by Churchill (1979). The results suggest a valid and reliable Student Engagement (SE) motivation scale that encompasses five distinct dimensions: Career Orientation, Financial Relevance, Self-Enhancement, Memorable Emotion, and Meaningful Behavior. These findings not only reinforce existing theories of motivation, both intrinsic and extrinsic (Hars & Ou, 2002), but also extend their application within the specific context of higher education.

Career orientation

Career orientation is identified as a primary motivator in driving current behaviors with a future-oriented focus. This is strongly supported by research findings conducted by Clements and Kamau (2018). Their research results indicate that students with a stronger career goal commitment tend to exhibit more proactive career behaviors. Such behaviors include skill development, career planning, and networking. Ultimately, these behaviors enhance their perceptions regarding the ability to obtain employment (perceived employability). In line with this, Lai et al. (2024) emphasize that effective career counseling programs can be utilized to improve students' future orientation. Namely, by fostering values, optimism, and proactive behavior toward their career goals.

In the context of this study, students do not merely view university as a place of learning, but also as a steppingstone for their future careers. A key indicator of this dimension is the existence of motivation among students to seek internship opportunities and the growth of confidence to work after graduation. It is also important to understand that this career motivation varies significantly. As stated by Klymenko (2022) as well as Sheveleva and Pankratova (2019). These researchers suggest that career motivation among students ranges from intrinsic to extrinsic motives. Intrinsic motives focus on professional competence and self-development, whereas extrinsic or pragmatic motives focus on job stability or rapid results. This variation is known to influence how students engage with their education and career planning. Furthermore, Larionov et al. (2025) found differences between working and non-working students. Students with work experience tend to have broader career planning horizons and higher self-confidence in their competencies compared to their non-working peers. Thus, these findings further enrich our understanding that career orientation as a motivator for student engagement is dynamic and influenced by individual experiences.

Financial relevance

The second factor is Financial Relevance. In developing countries, this factor emerges as a potent dimension. Financial relevance reflects the highly significant financial pressures faced by students. This finding aligns with various recent studies from similar contexts. Research in Sri Lanka and Ethiopia, for instance, demonstrates that undergraduate students experience tangible financial stress due to high tuition fees, inadequate family support, and elevated living costs such as accommodation and transportation. Ultimately, this affects students' academic performance and daily learning activities (Kumsa et al., 2020; Tesa, 2025). Financial pressure impacts not only the students' ability to meet their basic needs but also their mental well-being and social connections, which are crucial factors for academic success (Uddin et al., 2025; Tesa, 2025).

In the context of this study, items such as “tuition fees aligned with family conditions” and “abundance of scholarships” indicate that financial support from public institutions is not merely a mitigating factor, but also a key motivator in maintaining engagement. This underscores the importance of appropriate financing policies. Research from Ghana, for example, highlights that positive attitudes toward student loans can increase graduation rates. Research findings suggest that well-managed financial aid is key to supporting student persistence (Mahmoud et al., 2024). On the other hand, challenges such as delays in aid disbursement or cost-sharing programs in public universities can actually exacerbate students' financial instability (Tesa, 2025). These findings implicitly distinguish between the contexts of public and private schools. Public schools are generally more affordable and possess support schemes, whereas private schools may have higher costs. Tesa's (2025) findings simultaneously highlight that the primary driver of engagement is the existence of financial support itself.

Self-enhancement

Self-enhancement is a factor that reflects students' needs for social recognition and self-esteem. Self-enhancement has long been studied as a fundamental need that serves as the foundation of human motivation. Research findings prove that self-enhancement provides benefits for individual adjustment, including higher life satisfaction and positive affect, although its effects on interpersonal relationships may vary (Paulhus, 1998). Equally important is a positive

self-image and recognition from the social environment, which aligns with the view that individuals are motivated to maintain and enhance their self-esteem (Hohman & Brown, 2020). Neurocognitive studies even confirm that this self-enhancement process involves brain circuits, particularly those related to emotion regulation and reward, which help individuals maintain stable self-esteem during social processes (Parrish et al., 2021).

In the educational context, these findings have strong implications. Daily social interactions and perceptions of inclusion in the campus environment are closely linked to self-esteem. Particularly, social interactions and perceptions of inclusion highlight the dynamic role of social recognition in maintaining self-esteem over time (Wagner et al., 2023). Therefore, recognition of academic achievement and a positive self-image become powerful drivers for students to remain engaged with institutions that provide such recognition. Thus, scale items such as "others admire my achievements" represent a pivotal point of the self-enhancement factor. Consequently, an educational institution capable of facilitating positive social feedback and providing rewards for student achievements essentially fulfills this basic psychological need. This, in turn, strengthens the bond and the motivation for student engagement (Hohman & Brown, 2020).

Memorable emotion

The fourth factor is Memorable Emotion. This factor highlights the role of affection in building student engagement with their educational institution. This finding aligns with the understanding that positive academic emotions serve as a mediator in the relationship between attachment styles and students' learning approaches. This indicates that, fundamentally, emotional bonds influence the way students engage with their studies (Rentzios & Karagiannopoulou, 2021). Furthermore, behavioral problems that arise among students are reduced by a friendly, supportive, and democratic school environment. This underscores the importance of a positive affective climate for building healthy social bonds in schools, which has been proven to enhance attachment with peers (Hnin & Kim, 2022).

In the context of this study, pride in being part of the school, inspiration from lecturers, and an attractive campus environment can create emotional bonds that transcend mere rational considerations. Secure attachment with teachers and peers contributes to better emotion regulation, social competence, and academic achievement. Ultimately, this emphasizes the significance of emotional security in student engagement with the school (Dias et al., 2024). Moreover, interventions that promote attachment awareness and emotion coaching in schools, by strengthening emotion regulation and interpersonal relationships, have been proven to result in improved academic outcomes and a reduction in disciplinary issues (Rose et al., 2019). Consequently, the implications are very clear: public schools that may not be able to compete in terms of prestige or status can create positive emotional experiences. Such experiences are not merely supplementary; rather, they become a vital strategy for building long-term loyalty and engagement. By focusing on a supportive affective climate, public schools can build a unique and sustainable competitive advantage.

Meaningful behavior

Meaningful behavior is identified as a student seeking a purpose beyond themselves. This finding aligns closely with the Self-Determination Theory (SDT) framework. Personal values, strong intrinsic interests, persistence, and positive student outcomes provide an impetus for fostering student motivation. Motivation derived from these elements is far more potent than motivation driven by external rewards (Howard et al., 2021). The desire to contribute through voluntary activities and active participation in school indicates that student engagement is not transactional; rather, it is rooted in the search for meaning.

In the learning context, Mendo-Lázaro et al. (2022) emphasize through their research that schools play a vital role in supporting meaningful engagement between students and the institution. Furthermore, they state that cooperative learning environments oriented toward learning and social reinforcement directly support meaningful engagement and elicit goal-oriented student behaviors. Consequently, schools need to implement programs specifically designed to cultivate a "beyond-the-self purpose." As found in the study by Sepulveda et al.

(2021), such specifically designed programs have been proven to enhance intrinsic motivation, self-efficacy, and academic performance, while simultaneously reducing competitive and avoidance goal orientations.

Such meaningful engagement is reflected in the scale item "my actions stimulate the participation of others." From this reflection, a positive cycle is created that strengthens the community and the sense of belonging. A sense of belonging in school has been empirically proven to have a significant positive relationship with various outcomes, such as students' motivational, social-emotional, and academic results (Korpershoek et al., 2019). Thus, when students involve themselves in socially meaningful behavior, they not only strengthen community bonds but also enhance their own learning satisfaction and purpose. Creating this positive feedback loop will ultimately reinforce long-term engagement.

Final Scale

Given the theoretical alignment and empirical support discussed above, the following section presents the finalized measurement instrument derived from this rigorous validation process. In the follow-up study, 75 items were created based on the evaluation of previous studies and the free-thinking of students. By investigating improvements in model fit indicators and examining the validity and reliability of assessment models, the study accomplished the goal of identifying motivations for SE. The results have identified a motivation scale that engages students with five aspects and 30 items as follows in Table 6.

Table 6. Motivation scale that engages students with five aspects and 30 items

aspects	item
Career Orientation	I will be able to apply all the theories to my future work
	I have the opportunity to practice right at school
	I had the opportunity to practice with companies during my schooling
	I have the opportunity to contact companies in advance
	I am confident that I can work right after graduation
	I am confident enough to continue my higher education.
Financial Relevance	Tuition is suitable for family conditions.
	There are many incentives for personal living conditions.
	Easy and suitable travel conditions.
	There are many scholarships
	There are many opportunities to participate in extracurricular classes for free
	Have the opportunity to study abroad
Memorable Emotion	Direct contact with international students and experts
	School officials and lecturers have inspired me
	I am proud to be a student of the school
	Excellent learning, playing, and fitness environment.
	The school's natural setting captivated me.
	This school stimulates my emotions.
Meaningful Behavior	My actions stimulate other people's participation
	Other people will support my behavior.
	I have contributed youth to volunteer activities.
	I actively participate in school activities.
	I enthusiastically participate in forums to comment on school activities
	I give my best to my studies.
	I try my best to perform well in related tasks during my studies
Self-Enhancement	I feel satisfied with myself
	I get recognition from others
	Others admire my academic achievements
	Others expect to be like me.
	I want to position my image with others

Practical implications

From a practical perspective, the development of the SEMo scale can provide a strategic contribution to the management of higher education institutions, particularly public schools in developing countries. The developed instrument serves as a diagnostic tool that enables administrators to gain a deeper understanding of 'why' students persist and remain engaged with their institution. Through empirical scores on each dimension, policymakers can identify areas requiring intervention. For instance, a low score in the financial relevance dimension could serve as an indicator of the need for more aggressive and structured financial support policies, such as the optimization of scholarship schemes, tuition assistance, or dormitory support. Alternatively, a low score in the memorable emotion dimension could signal a need to revitalize campus life, enrich students' affective experiences, or enhance empathy training for both academic and non-academic staff. Meanwhile, in building student loyalty, scores in the self-enhancement dimension are crucial elements that demonstrate the importance of social recognition and spaces for student self-development. By mapping these motivational profiles, universities can shift from a generalized recruitment and retention approach toward strategies that are more precise and data driven. Ultimately, institutional sustainability will no longer be determined solely by academic quality, but also by management's ability to comprehensively fulfill the psychological and social needs of students.

Nonetheless, this study possesses several limitations that warrant consideration. First, the sample size is relatively limited and originates from a specific institutional context; thus, generalizing the findings to a broader population should be done with caution. Second, the research design is cross-sectional, and the use of self-reported data may lead to potential perceptual biases. This study has not explicitly examined differences across gender or other demographic characteristics, despite the fact that these variables may influence the dynamics of engagement motivation. Therefore, future research is encouraged to: 1) involve larger and more diverse samples; 2) conduct cross-cultural testing and construct invariance tests; and 3) consider longitudinal designs to assess the stability of motivation over time. Integrating the SEMo scale with academic performance indicators or student retention rates also constitutes an important agenda to strengthen the predictive validity of this instrument within the context of strategic institutional decision-making.

CONCLUSION

The analysis of studies related to the concept and scale of SE motivation shows that there is still limited variety in research contexts. Therefore, stemming from these reasons, the present study has added some important issues to the theoretical foundation of SE motivation as follows:

Firstly, global economic integration and the opening of education have brought a variety of school choice opportunities for students and also brought many difficulties for educational institutions in the field of education. Therefore, there is an increasing desire by administrators to understand more deeply what motivates students to engage with an educational institution, especially a public school. The results of the present study will likely fill this gap by looking at students' motivations for engagement with a public school. The fundamental contribution of this study is to shed light on their motivation to engage by exploring the psychology of students through their emotions and desires. Values related to SE motivation have been successfully identified through the use of the ladder interview technique. This technique has helped researchers understand how students grasp the relationship between attachment characteristics and values that are meaningful to them (Reynolds Gutman, 1988) that are essentially from the question “why is that important to you”. Second, the present study has also provided the first concrete concepts of aspects of SE motivations for a public school in a developing country. Therefore, the study has for the first time proposed the concepts of SE motivation suitable for specific contexts.

The other contribution of the present study is to have developed a valid and reliable scale for measuring SE motivation that has come from a solid theoretical foundation. Although some research has been done exploring SE motivation. However, previous studies have not filled the gap in context diversity, so the results do not fully reflect the reasons that motivate students to

engage with a public school in a developing country like Vietnam. Therefore, this study attempted to address this shortcoming by developing a valid and reliable set of measurement tools to measure the constructs that are believed to drive SE. This is considered an important contribution of research that can help institutions measure SE. Educational administrators can use this tool in identifying the important reasons for attracting students, maintaining their engagement, and then designing appropriate enrollment campaigns to achieve their goals.

Discovering the motivations that drive SE will bring many benefits to educational administrators. The number of students attached to an institution plays an important role in the success of a media campaign. The larger the number, the better the chance for a successful media campaign. Therefore, understanding the psychology of students to motivate a large number of students to engage is one of the most concerned issues. To achieve this goal, education managers first need to have a deep understanding of "Why do students choose to attend this school?", "Why do students actively participate in school activities?", "Why do students often share pictures of the school".

Research results also show that financial relevance is one of the important motivations for SE. This is a sign of recognition for educational managers in public schools to offer financial support policies such as scholarships, dormitory support, support for extracurricular classes, external funding sources, etc. to promote SE. In addition, other equally important factors that are self-improvement, career orientation, meaningful behavior and memorable emotions are also reasons that strongly motivate students' behavioral intentions to associate with the school. Therefore, managers can base on this research result to propose more appropriate communication strategies in promoting SE.

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