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Peer Financial Comparison and Life Satisfaction among University Female Students: Mediating Role of Self-Esteem and Moderating Role of Social Media Usage Intensity

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ABSTRACT

This culture of comparison that is prevalent on social media may be negatively affecting the mental health of young people, particularly females. The purpose of this study is to explore the relationship between peer financial comparison and the life satisfaction levels of female university students, with self-esteem as a mediator and social media usage intensity as a moderator. This study draws on Social Comparison Theory and Self-Determination Theory to explain how external comparisons can become internalised and how this is influenced by digital engagement. The quantitative research design approach based on the positivist paradigm was used. The data were gathered via a web-based questionnaire distributed to female students at the selected Universities in Tanzania using Google Forms. 290 valid responses were analysed using PLS-SEM, SmartPLS 4. The results show that financial comparisons with peers have a strong negative impact on life satisfaction and self-esteem. Self-esteem, in turn, positively influences life satisfaction and partially mediates the relationship between financial comparison and life satisfaction. In addition, the relationship is significantly moderated by the intensity of social media use; that is, the negative relationship is stronger for more engaged social media users. The study advances theory by applying Social Comparison Theory to the financial domain, adding both psychological and contextual perspectives. It also points to the moderated impact of social media on well-being outcomes. From a practical point of view, the findings indicate the need for interventions regarding the positive use of social media, the reinforcement of self-esteem and financial awareness of university students.

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INTRODUCTION

The use of digital technologies has revolutionized the way that young adults interact socially, construct their self-image and evaluate themselves (Chen et al., 2024; Reis & Maia, 2024). In universities, social media has become an integral part of students' lives, not only for communication with others, but also for self-evaluation compared to others (Nguyen et al., 2024; Clayborne et al., 2025). Today, these comparisons extend beyond the social and academic realms to the financial realm, whether in the consumption of items, trips, or material posted online (Reis & Maia, 2024; Chen et al., 2024). This is particularly the case for female university students, who are more active on social media, place a strong emphasis on images, and are more willing to accept socially constructed notions of success, appearance, and lifestyle (Kamran et al., 2025; Aziz et al., 2021). This has resulted in peer financial comparison being identified as an important but under-explored determinant of the psychological well-being and life satisfaction of the current generation of students (Nguyen et al., 2024; Yoon & Hur, 2021).

Theoretically, social environments are believed to help psychological growth by encouraging positive self-assessment and life satisfaction (Diener et al., 1985; Ryan & Deci, 2017). In university environments, it is desirable that, regardless of socio-economic disparities, students develop stable self-esteem and a balanced sense of self-achievement (Szczęśniak et al., 2022; Aziz et al., 2021). The ideal condition, however, is challenged by growing exposure to peers' financial states through social media (Nguyen et al., 2024; Reis & Maia, 2024). Excessive exposure to idealised, curated images of wealth and lifestyle may lead to misconceptions about reality and set unrealistic standards for comparison (Chen et al., 2024; Vogel et al., 2014). This can consequently result in a negative self-appraisal, which can lead to a lack of satisfaction in one's life (Sim & Prihadi, 2020; Yoon & Hur, 2021). The gap between the intended supportive social context and the actual comparison-based context is an increasingly significant psychological issue that warrants academic investigation (Clayborne et al., 2025; Nguyen et al., 2024).

It is well established in empirical research that social comparison processes are strongly associated with subjective well-being (SWB). In particular, upward comparisons have been linked to decreased life satisfaction and increased emotional distress among young adults (Sim & Prihadi, 2020; Clayborne et al., 2025; Yoon & Hur, 2021). But self-esteem has been seen as a main psychological mechanism by which such effects occur. Constant upward comparison leads to decreased self-esteem, which in turn lowers overall well-being (Szczęśniak et al., 2022; Aziz et al., 2021; Qadah, 2023). Although these findings are strong, much of the literature reviewed has been largely conceptual and not differentiated with respect to which domain constitutes social comparison (financial comparison is becoming increasingly common in consumer-oriented and digitally mediated contexts).

Peer financial comparisons can have repercussions beyond the emotion. Some of these are direct effects, which refer to lower self-esteem, dissatisfaction with one's own performance, and lower life satisfaction. Such comparisons can indirectly have an impact on behaviour, such as financial stress and impression management behaviours to sustain perceived social status, and compulsive spending. These impacts seem to be especially notable on female students, who are more inclined to internalise social norms and are more likely to undergo comparison processes concerning lifestyles and consumption (Kamran et al., 2025; Aziz et al., 2021). These interactions may, over time, lead to broader psychological issues such as anxiety, lack of interest in learning and overall well-being.

Although the research base is expanding, there are several critical issues missing. First, there is little empirical evidence from the African context, especially Tanzania, to support digital adoption which, in connection with the socio-economic inequalities, is likely to exacerbate comparison effects. Second, peer financial comparison has seldom been studied as a unique and separate phenomenon from the general social comparison phenomenon, although it is becoming more relevant among university students. Third, although some studies indicate women are affected more than men by comparison dynamics, the gendered aspects of these processes are underexplored in Sub-Saharan Africa. Fourth, while the "mediating" role of self-esteem is well established, its role as a mediator of the financial comparison to life satisfaction has yet to be adequately examined in an academic setting. Fifth, the intensity of social media use has been used rather directly as a predictor, as opposed to a contextual factor that may enhance or diminish the impact of comparison. Last, but not least, there is a lack of theoretical approaches which combine individual psychological processes with more social and gender-based approaches.

The current study aims to fill in these gaps by investigating the association between peer financial comparison and life satisfaction among female university students, considering the mediating role of self-esteem and the moderating role of social media usage intensity. Based on Social Comparison Theory and Social Role Theory, it is suggested that financial comparisons directly affect life satisfaction, but also indirectly affect life satisfaction through self-esteem, and that the relationship between financial comparisons and life satisfaction is stronger when social media use is intensive. The study is based in the context of the Tanzanian university, with context-specific evidence added to the literature, which is dominated by studies in Western and Asian contexts.

This study aims to examine whether peer financial comparison has a negative effect on life satisfaction, whether the relationship between peer financial comparison and life satisfaction is mediated by self-esteem, and whether the intensity of social media use moderates the effect of peer financial comparison on life satisfaction. By doing so, the study aims to gain a better understanding of the effects of digital environments on the psychological well-being of female students. This research is relevant because it may help to expand theories, further develop empirical knowledge on comparison processes, and inform practical interventions that aim to promote healthy social media use and psychological resiliency in a university setting.

The remainder of this paper is organised as follows. An analysis of the literature and theory is provided in the following section to support the development of hypotheses. The methodology section follows, which explains the research methodology and the use of Partial Least Squares (PLS) structural equation modelling. The empirical findings and discussion are presented in the subsequent sections, and implications, limitations, and recommendations for future research are provided in the last section.

LITERATURE REVIEW

Theoretical review

The present study investigates peer financial comparison and life satisfaction in female university students from the perspective of a set of complementary theories that explain the emergence, implication and amplification of comparison processes in digital environments on self-perceptions. The study is based on the Social Comparison Theory (Festinger, 1954), which theorizes that people tend to compare themselves with others, particularly when there is an absence of objective criteria. This is especially prevalent in modern university environments, where access to highly selective versions of peers' financial experiences through social media fosters a continuous pattern of upward comparisons (Nguyen et al., 2024; Reis & Maia, 2024). Such comparisons are not always benign but instead can lead to negative appraisals of oneself and a decrease in general satisfaction in life (Sim & Prihadi, 2020; Yoon & Hur, 2021). Further, research indicates that exposure to idealised online lives can lead to a sense of

dissatisfaction and emotional distress, especially in the case of female students who are highly active on image-based platforms (Szcześniak et al., 2022; Clayborne et al., 2025). This theoretical lens directly relates to the first goal of this study, which is to explore whether there is a negative impact of peer financial comparison on the life satisfaction of female students.

Just being able to compare, however, does not account for the extent to which some are more psychologically affected than others. The study will therefore account for this by adopting Self-Determination Theory (Deci & Ryan, 2000; Ryan & Deci, 2017), which highlights the importance of psychological needs in determining a person's well-being. Upward financial comparison can bring about a threat to competence or self-worth, causing a lowering of self-esteem. This drop in self-esteem is a key pathway by which comparisons lead to reduced levels of life satisfaction. This pathway is supported by empirical studies, which have revealed that low self-esteem is a major contributor to decreased well-being in digitally mediated environments (Szcześniak et al., 2022; Qadah, 2023). The second objective of the study is to examine the mediating role of self-esteem in the relationship between peer financial comparison and life satisfaction, which correlates with this perspective. In this way, self-esteem is not merely an end result, but a psychological pathway for external comparisons to be internalized experiences.

These processes are further complicated by the Social Role Theory (Eagly, 1987), which adds a gender dimension to the above processes. Female students are often socialised in contexts which require them to be aware relationally, socially evaluated and have a focus on lifestyle presentation. Consequently, they might be more susceptible to comparisons with others, especially as they pertain to the superficial signs of achievement, such as wealth and how they consume goods. This can be part of the reason why viewing comparison material can have a greater psychological impact on females than males. Meanwhile, Uses and Gratifications Theory (Katz et al., 1973) offers a relevant backdrop as it is a theory that explains the differences in social media engagements. Not everyone gets the same sort of social media, and not everyone uses social media to the same degree. This might be because those who engage in more intense ways are likely to be exposed to more comparison inducing content, thus increasing the number of upward comparisons that people make. Previous research indicates that increased social media usage leads to an increase in exposure to idealised lifestyles and hence reduced well-being (Kross et al., 2013; Verduyn et al., 2017). The third objective of the study is based on this theoretical insight, which is to look at whether the intensity of social media usage is a moderator between peer financial comparison and self-esteem.

While each of these theories provides some useful information, they are also each inadequate when standing alone. Social Comparison Theory provides an explanation of the comparison process but is limited in its ability to explain the influence of context, such as media exposure. Although Self-Determination Theory offers a sound account of the psychological outcomes, the theory does not explicitly include comparison processes. Social Role Theory emphasises gender vulnerabilities, but it is possible to overlook individual differences, and Uses and Gratifications Theory focuses on the gratifications of using the media, but does not necessarily consider the psychological impacts. These theories are insufficient on their own; however, when combined, they are. Social Comparison Theory accounts for why people compare; Self-Determination Theory accounts for the effects of comparison on internal state; Social Role Theory accounts for who is most vulnerable to comparison; and Uses and Gratifications Theory accounts for when and how effects of comparison are heightened. This integration enables the study to consider the complexity of real-life experiences, especially in digital, psychological, and contextual areas, where both are constantly at play.

The said theoretical integration also serves as the conceptual framework of the study, where peer financial comparison is used as the independent variable affecting life satisfaction, self-esteem is used as a mediator and intensity of using social media is used as a moderator. This is a purposeful selection of a blended model. A one

theory-based approach to alternative strategies would be insufficient to cover the multi-layered nature of the research problem, particularly in a fast-changing digitalised environment and changing social norms like those in Tanzania. The framework also connects to the learning goals, can be used to develop hypotheses and gives a coherent basis for interpreting the results. Finally, it enables the study to go beyond simply discovering relationships and to account for why the relationships exist and when they are more prominent.

Empirical literature review and hypotheses development

The major constructs used in this study are operationally defined and substantiated by literature to provide conceptual clarity and theoretical grounding. Peer financial comparison is the degree to which an individual compares his or her financial situation, consumption habits, and lifestyle with others, especially those that are easily seen on social media (Festinger, 1954; Vogel et al., 2014). Life satisfaction is defined as a person's global cognitive judgment of the quality of his or her life in accordance with personal standards and expectations (Diener et al., 1985; Nguyen et al., 2024). Self-esteem is a person's general view of themselves, the overall self-evaluation of the attitude towards oneself as a positive or negative phenomenon (Rosenberg, 1965; Szcześniak et al., 2022). Social media usage intensity reflects how involved an individual is with social media, in terms of how often they use it, emotional attachment, and how it is incorporated into their everyday life (Ellison et al., 2007; Verduyn et al., 2017). The relationships under study are based on these constructs.

Based on Social Comparison Theory, people tend to compare their own situation with that of others, particularly in situations where knowledge about others is readily available (Festinger, 1954; Appel et al., 2016). This process has been exacerbated by social media, where people come into contact with sanitised versions of people they don't know, and of their financial lifestyles, and are likely to make comparisons upwards. Comparisons like this often accentuate the lack of something, and they find it hard to compare themselves with their life. Studies suggest that upward comparison on social media can lead to decreased life satisfaction and dissatisfaction in youths (Sim & Prihadi, 2020; Vogel et al., 2014). In the context of the university, where financial independence is still developing, these impacts will most likely be more pronounced.

H1: Peer financial comparison is negatively associated with life satisfaction among female university students.

Peer financial comparisons are anticipated to impact internal psychological processes such as self-esteem, as well as have a direct effect on life satisfaction. Self-Determination Theory suggests that for psychological well-being, a person needs to find their competence and self-worth (Deci & Ryan, 2000; Ryan & Deci, 2017). Upward financial comparisons can lead to a sense of failure and lack of ability, thus threatening self-worth. This correlation has been supported by empirical research, which has demonstrated that idealised lives on social media correlate with a decrease in the self-esteem of adolescents, particularly female students (Qadah, 2023; Szcześniak et al., 2022). This means that not only do they engage in financial comparison with others on the outside, but also within themselves, consequently affecting self-perception.

H2: Peer financial comparison is negatively associated with self-esteem among female university students.

Self-esteem is the key factor affecting life satisfaction. People with high self-esteem are more likely to make positive self-appraisals as they have a greater sense of self-worth and are better able to withstand negative comparisons. Low self-esteem, on the other hand, is linked to unhappiness, negative feelings and decreased happiness. In all cultures, there is a strong positive relationship between self-esteem and life satisfaction (Aziz et al., 2021; Diener et al., 1985). In the current study, it is hypothesized that self-esteem is one of the important psychological factors which can influence students' understanding and coping with their life situations.

H3: Self-esteem is positively associated with life satisfaction among female university students.

These relationships together indicate that there might be a mediation process between peer financial comparison and life satisfaction. Financial comparison is not thought to have a direct effect but rather to influence self-esteem which subsequently influences life satisfaction. Upward comparisons are detrimental for self-esteem when students think that they are doing worse financially and self-esteem then decreases which in turn decreases the overall life satisfaction. The supporting evidence for this mediation pathway comes from previous studies exploring the link between social comparison and well-being, with self-esteem as an important mediator (Sim & Prihadi, 2020; Cui et al., 2025). This serves to remind us that it is not only important to know whether comparison has an impact on well-being, but also how it does.

H4: Self-esteem mediates the relationship between peer financial comparison and life satisfaction.

Such relationships describe the psychological mechanism, but the extent of such effects might be conditioned by the context. Uses and Gratifications Theory posits that the amount of engagement one has with media platforms can differ, and this level of engagement can have an impact on exposure to comparison-inducing content (Katz et al., 1973; Verduyn et al., 2017). The more that students use social media, the more likely and the more vividly they will see peers' financial lives, which potentially promotes upward comparison. Research has shown that increased social media consumption is linked to increased negative feelings and reduced well-being (Kross et al., 2013; Clayborne et al., 2025), and this is attributed to greater exposure to idealised content. This means that greater social media use intensity can exacerbate the negative impacts of the comparison of finances by peers on life satisfaction.

H5: Social media usage intensity moderates the relationship between peer financial comparison and life satisfaction, such that the negative relationship is stronger at higher levels of usage intensity.

Conceptual Framework

Overall, the proposed hypotheses reflect a coherent model in which peer financial comparison (PFC) influences life satisfaction (LS) both directly and indirectly through self-esteem (SE), while social media usage intensity (SMUI) shapes the strength of this relationship.

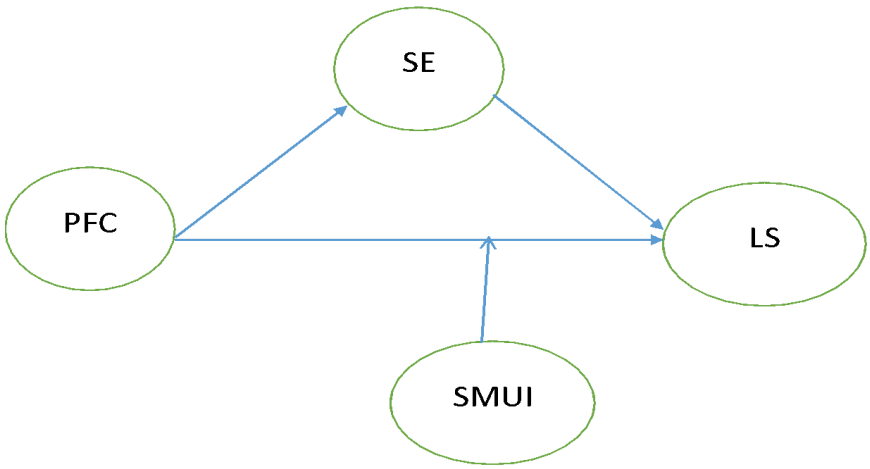


Figure 1: Conceptual Model of Peer Financial Comparison, Self-Esteem, Social Media Usage Intensity, and Life Satisfaction

METHODS AND PROCEDURES

Research Philosophy and Approach

This research adopts the positivist paradigm, which is based on the notion that reality is objective, measurable, and can be understood through empirical observation and statistical analysis. The paradigm is more suitable for studies that are aimed at testing hypotheses, which are theoretically derived, and establishing relationships between variables using quantitative techniques (Saunders et al., 2019; Creswell & Creswell, 2018). To support this philosophical position, the study employs a quantitative research approach to systematically measure the variables of peer financial comparison, self-esteem, intensity of social media use, and life satisfaction, and then test the relationships statistically.

Research Design, Strategy and Study Area

The study design for the data collection was a cross-sectional survey with a single point in time. This design is common in the behavioural and social sciences, seeking to investigate relationships between variables and assess mediation and moderation within a structural model (Hair et al., 2021; Kline, 2016). A cross-sectional study design was used because it enables efficient collection of data from a large and diverse group of respondents, given the study's focus on gaining insights into the role of peer financial comparison in female life satisfaction in universities.

The study was conducted within the Tanzanian higher education system, with a focus on female students in public and private universities. Tanzania is a particularly telling context in that social media penetration amongst young adults is accelerating, and there is an obvious socio-economic gap that could further amplify comparison processes. The target population was the female students in the university who use social media platforms. A non-probability convenience sampling method was used due to accessibility constraints and the difficulty of accessing the population across a wide geographical area. This method has been commonly used for research on online behavior and social media interactions (Wright, 2017; Evans & Mathur, 2018).

Population, sampling procedure and sample size

Female university students using social media platforms in public and private universities were targeted as our study population. This population was chosen because it is especially relevant to the objectives of the study, as women students are in a more vulnerable position to carry out social comparative processes and are highly active in the digital environment, where the comparison process is related to the financial sphere (Szcześniak et al., 2022; Qadah, 2023).

A non-probability convenience sampling method was used to recruit the subjects. This method was considered suitable, as respondents were easily accessible and the practical problems of contacting the geographically dispersed student population were addressed. Data collection was conducted online via Google Forms, which was shared in the University WhatsApp groups and on social media. The methodology has been adopted in studies

involving digitally active populations and offers the benefit of efficiently collecting data across many institutions (Wright, 2017; Evans & Mathur, 2018). Convenience sampling can be valid for exploratory and theory-testing research that is not concerned with making population estimates but rather relationships among variables.

The sample size was determined according to the recommended PLS-SEM guidelines to ensure sufficient statistical power. The "10-times rule" states that the minimum sample size should be at least 10 times the maximum number of structural paths leading to a construct in the model. There are more recent suggestions, though, that larger sample sizes are required for robustness and generalisability (Hair et al., 2021). In view of the two effects (mediation and moderation) in the proposed model, a minimum of 200 respondents was deemed necessary, with an ideal range of 250-400. The final sample size of 290 respondents was above the recommended minimum and was thus deemed adequate for reliable estimation of the model and testing of hypotheses.

To increase representativeness and to reflect variation in the institutional context, the respondents were sampled from several universities (public and private) in Tanzania. In this way, a more comprehensive insight into peer financial comparison can be gained across various academic settings and socio-economic groups. Table 1 shows the distribution of the respondents among the universities selected.

Table 1: Distribution of Respondents by University

University Name	Type	Location	Number of Respondents
University of Dar es Salaam (UDSM)	Public	Dar es Salaam	98
Mzumbe University	Public	Morogoro	72
Moshi Co-operative University (MoCU)	Public	Moshi	64
St. Augustine University of Tanzania (SAUT)	Private	Mwanza	56
Total			290

Having multiple universities allows for the generalizability of the study, and its results are not restricted to a particular institution. It also points to disparities in resource use and digital exposure among students, which are important when conducting studies on financial comparisons (Yanto et al., 2021; Nguyen et al., 2024).

Research Instruments and Measurement

Data were collected through a structured questionnaire administered via Google Forms. Easy access to the target population was achieved by distributing the survey link through the university WhatsApp groups and various student networks and social media platforms. The inclusion criteria were being female, being a student at any university in Tanzania, and being an active social media user on at least one platform. Questionnaires that were incomplete or did not meet these criteria were excluded from the analysis to ensure data quality and relevance.

The research instrument consisted of multi-item scales adapted from existing scales in the literature. All items were rated on a 5-point Likert scale from "strongly disagree" to "strongly agree. Peer financial comparison was measured with adapted items from the Social Comparison Orientation Scale in the social media environment, with a specific emphasis on financial content that the participants see (Gibbons & Buunk, 1999; Sim & Prihadi, 2020). The

Rosenberg Self-Esteem Scale (Rosenberg, 1965; Szcześniak et al., 2022) was used to measure self-esteem, and the Satisfaction with Life Scale (Diener et al., 1985; Nguyen et al., 2024) was used to measure life satisfaction. Items adapted from the Facebook Intensity Scale (Ellison et al., 2007; Verduyn et al., 2017) were used to measure the intensity of social media use. Using validated instruments enhances the construct validity and consistency with previous studies.

Data Analysis Techniques

Before proceeding with the main analysis, special attention was paid to data preparation, an important step in ensuring the robustness of PLS-SEM results. Data cleaning was conducted prior to the dataset, which involved missing values, outliers, and incomplete or inconsistent responses. These steps are crucial in PLS-SEM to prevent biased parameter estimates and unreliable model results. Although PLS-SEM does not impose strong normality assumptions, the data distribution was examined to identify any outliers that could affect model estimation. Furthermore, multicollinearity among indicators and constructs was assessed to ensure that the predictor variables were not highly correlated and that the accuracy of the estimates was not compromised (Hair et al., 2021).

As part of the analytical process, the data were cleaned to obtain an initial understanding of the sample characteristics and the distribution of key variables. This preliminary analysis provides valuable background information for subsequent structural relationships and for assessing the validity of the data with respect to the assumptions made for multivariate analysis.

Partial Least Squares Structural Equation Modelling (PLS-SEM) and SmartPLS 4 software were used for conducting the main analysis. PLS-SEM was chosen because the study focused on predicting and explaining variance rather than strictly confirming theories. The method is suitable for the simultaneous analysis of complex models that include direct, mediating and moderating effects. Further, PLS-SEM is more flexible than covariance-based SEM (CB-SEM) as it does not require strict normality assumptions and is robust to moderate sample sizes, which are typically encountered in behavioural research (Hair et al., 2021; Kline, 2016). The analytical procedure was done in two steps. The initial step was to test the measurement model to determine the reliability and validity of the constructs. Cronbach's alpha, composite reliability, and average variance extracted were used to assess the internal consistency and convergent validity, respectively. To assess the discriminant validity, the Heterotrait–Monotrait ratio was used because it is more robust in assessing construct distinctiveness (Henseler, 2015).

After obtaining a satisfactory measurement model, the next step was to evaluate the structural model to test the hypothesised relationships between constructs. This involved studying the direct effect of peer financial comparison on life satisfaction and self-esteem; the direct effect of self-esteem on life satisfaction; the mediating role of self-esteem; and the moderating role of the intensity of social media use. The significance of the path coefficients and indirect effects was evaluated using bootstrapping with 5,000 resamples. Product interaction terms of indicators were used to analyse the moderation effect, which is suitable for the PLS-SEM framework when continuous moderators are used (Hair et al., 2021).

Assessment of Common Method Bias

The common method bias (CMB) was evaluated before hypothesis testing because all data in the study were self-reported and collected from the same source at a single time point. PLS-SEM research was followed by both Harman's single-factor test and the whole-collinearity variance inflation factor (VIF) approach.

First, Harman's single-factor test was applied to an exploratory factor analysis of all the measurement items in order to see if a single factor explained most of the variance. Results showed that the first unrotated factor accounted for 38.4% of the total variance, which is lower than the recommended 50% (Podsakoff et al., 2003). This suggests that there is not a significant risk of common method bias in this study.

Secondly, common method bias was further assessed using the full-collinearity VIF approach suggested by Kock (2015). The findings indicated that the VIF of all the constructs was less than the critical value of three (3.3), which are peer financial comparison (VIF = 2.41), self-esteem (VIF = 2.18), social media usage intensity (VIF = 2.56), and life satisfaction (VIF = 2.27). These results indicate that no problematic multicollinearity exists and that the study's results will not be seriously affected by common method bias.

Thus, according to the single-factor test of Harman and the results of the full collinearity test (VIF), it is concluded that in this study, the common method bias was controlled well, and the results were not significantly affected by common method bias.

FINDINGS AND DISCUSSION

Response Rate

Data collection was conducted through an online questionnaire via Google Forms among female university students at selected universities in Tanzania. The survey link was disseminated via online channels, including WhatsApp groups and student networks. 302 responses were collected in the data collection period. Data screening and cleaning were performed to remove incomplete and inconsistent responses, and 290 valid responses were retained for final analysis. The final sample size was deemed sufficient for the application of Partial Least Squares Structural Equation Modelling (PLS-SEM) because it exceeded the minimum recommended for estimating a structural model (Hair et al., 2021; Kline, 2016). The number of valid responses was relatively high, and this may be due to the relevance of the topic of the study as well as the effectiveness of the data collection instruments used online.

Demographic characteristics

Demographic characteristics of respondents are considered an important context for the findings. Since the research objectives were clearly related to female university students, the study was conducted on this particular group. The respondents were sampled from several universities in Tanzania, with a variety of backgrounds and locations. The age distribution showed that most participants were 21-25 years old, representing typical undergraduate age groups. There was a smaller proportion in the 18-20 and over 25 age bands, suggesting that they represented various university levels.

With respect to level of study, the majority of respondents were undergraduate students, while a smaller number were pursuing postgraduate programmes. This mirrors the overall university enrolment in Tanzania, where undergraduate enrolments are much higher. As for year of study, respondents ranged from freshmen to third-year

students, which would allow for some differences in their academic experiences and exposure to financial and social environments.

Additionally, social media usage patterns were studied because they were relevant to this study. Most respondents said they use social media daily, and many reported being engaged in a variety of activities. Some platforms were used more often, such as Instagram, TikTok, and WhatsApp, which are popular channels of digital communication among young adults. This validates the sample for the study of the effect of peer financial comparison among the digitally active population.

Table 2: Demographic Characteristics of Respondents (N = 290)

Variable	Category	Frequency	Percentage (%)
Age	18–20 years	68	23.4
	21–25 years	172	59.3
	Above 25 years	50	17.3
Level of Study	Undergraduate	228	78.6
	Postgraduate	62	21.4
Year of Study	First Year	96	33.1
	Second Year	102	35.2
	Third Year	92	31.7
Daily Social Media Use	Less than 1 hour	32	11.0
	1–3 hours	104	35.9
	3–5 hours	96	33.1
	More than 5 hours	58	20.0

Measurement model evaluation

Indicator Reliability

The outer loadings of each indicator for the tested constructs were used to assess indicator reliability. Based on the known guidelines, an outer loading of 0.70 or higher indicates that the construct explains a substantial proportion of the variance in its corresponding indicator, thereby demonstrating adequate indicator reliability (Hair et al., 2021). Results show that all items of each indicator have high loadings on that indicator. The variable loadings for LS range from 0.893 to 0.910, indicating excellent reliability. Measurement consistency, as shown by the peer financial comparison (PFC) indicators, ranges from 0.905 to 0.934, reflecting very strong measurement consistency. Likewise, indicators of self-esteem (SE) vary between 0.860 and 0.882, and indicators for social media usage intensity (SMI) vary between 0.870 and 0.930. Each value exceeds the suggested threshold, indicating that each indicator is a good measure of its respective construct.

The loading for the interaction term (SMI × PFC) assessing the moderation is 1. This is a natural outcome of PLS-SEM if a product indicator approach or a two-stage approach is used, and thus is not concerning in terms of reliability..

Overall, the results confirm that indicator reliability is well established, and no items require removal.

Table 3: Indicator Reliability

Construct	LS	PFC	SE	SMI	SMI x PFC
LS1	0.893				
LS2	0.908				
LS3	0.91				
LS4	0.906				
LS5	0.903				
PFC1		0.934			
PFC2		0.923			
PFC3		0.917			
PFC4		0.905			
SE1			0.882		
SE2			0.86		
SE3			0.86		
SE4			0.878		
SE5			0.874		
SMI1				0.93	
SMI2				0.87	
SMI3				0.916	
SMI4				0.924	
SMI x PFC					1

Internal Consistency Reliability

Internal consistency reliability reflects the consistency of indicators of a construct. This is usually done by examining Cronbach's alpha and composite reliability (CR), and it is considered acceptable when these values fall within the range of 0.70 to 0.95 (Hair et al., 2021). Given the high outer loadings across all constructs, it is not surprising that Cronbach's alpha and composite reliability are above the minimum criteria. Cronbach's alpha values indicated that the measurement model for each construct had satisfactory internal consistency, as the values were close to 1. Moreover, there are no excessively high values (0.95 or more) for the constructs, suggesting that multicollinearity or redundancy among items is not a problem.

Table 4: Internal Consistency

Construct	Cronbach's alpha	Composite reliability (rho_c)
LS	0.944	0.957
PFC	0.939	0.956
SE	0.92	0.94
SMI	0.937	0.951

Convergent Validity

Convergent validity is the degree to which the indicators of a construct share a large percentage of the variance. It is assessed using Average Variance Extracted (AVE), which indicates that more than 50% of the variance in the indicators is explained by the construct, with scores of 0.50 or above (Hair et al., 2021).The high outer loadings of all the constructs indicate that the AVE values are above the recommended value. This indicates that the indicators have a good convergence in depicting their respective constructs. Convergent validity is expected in this study as constructs like life satisfaction and peer financial comparison have particularly high loadings and are expected to have high AVE values.

Table 5: Convergent Validity

Construct	Average variance extracted (AVE)
LS	0.817
PFC	0.846
SE	0.758
SMI	0.829

Discriminant Validity

Discriminant validity is used to assess the degree to which constructs differ. To assess discriminant validity, the Heterotrait–Monotrait ratio (HTMT) (Henseler et al., 2015; Hair et al., 2021) was used, as it is considered more reliable and robust than other approaches for evaluating construct distinctiveness in the context of PLS-SEM. The HTMT values should be less than 0.85; some say there should be a strict criterion of less than 0.90 in more lenient cases. As seen in the HTMT results in Table 6, all the construct pairings are well below the conservative cut-off of 0.85. In particular, the HTMT value between LS and PFC is 0.727, and between LS and SE is 0.760. Similarly, the correlation coefficient between PFC and SE is also within the acceptable limit (0.755). These values are relatively high but not at the recommended absolute value, indicating that the constructs are related yet empirically distinct.

These values of the HTMT are also significantly lower (between 0.057 and 0.096), revealing high differences between SMI and the other constructs. Further, all constructs in the interaction term (SMI × PFC) have low HTMT values, with the highest being 0.261 with life satisfaction. This is a reasonable finding, as the variance of interaction constructs is generally supposed to be unique variance not covered by the variance of its constituents.

Importantly, none of the HTMT values approaches or exceed the threshold of 0.85, indicating no multicollinearity or construct redundancy. Thus, it is demonstrated that each construct in the model measures a different concept and therefore satisfactory discriminant validity is achieved.

Table 6: Discriminant Validity (HTMT values)

Construct	LS	PFC	SE	SMI
LS				
PFC	0.727			

SE	0.76	0.755		
SMI	0.087	0.096	0.057	
SMI x PFC	0.261	0.069	0.078	0.173

Structural (Path) Model Evaluation

The aim of the structural model analysis was to examine the direct, mediated and moderated relationships among peer financial comparison (PFC), self-esteem (SE), social media usage intensity (SMI) and life satisfaction (LS) in line with the hypotheses.

Results indicate that peer financial comparison has a significant negative effect on life satisfaction ($\beta = -0.304$, $t = 4.281$, $p < 0.001$). This shows that the more financially disadvantaged the female university students are, the less satisfied they are with life. Thus, the hypothesis H1 is accepted.

Peer financial comparison also has a significant negative impact on self-esteem ($\beta = -0.705$, $t = 16.442$, $p < 0.001$). This indicates that the more students compare their financial situation with their peers, the lower their self-worth is. This result suggests that the proposed relationship holds and thus supports H2.

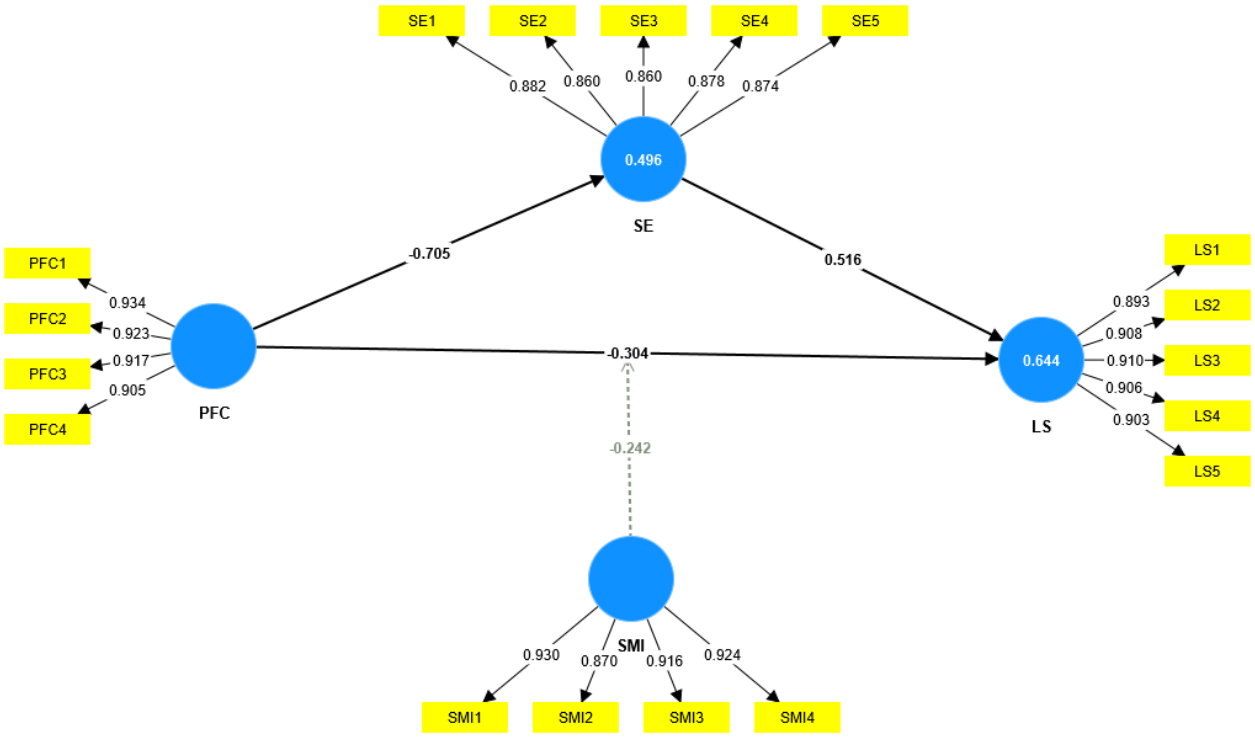
Self-esteem, in turn, has a positive and significant impact on life satisfaction ($\beta = 0.516$, $t = 7.963$, $p < 0.001$). This suggests that students who have high self-esteem are more likely to have high life satisfaction. This finding confirms the theoretical prediction and thus H3.

In the mediation analysis, the results show that the partial mediation effect of self-esteem between peer financial comparison and life satisfaction is statistically significant, with $\beta = -0.364$, $t = 6.218$, and $p < 0.001$. We have established the direct effect from PFC to SE, and it is significant, so this is the indirect effect from PFC to SE, with SE to LS also significant. This indicates that PFC has a direct effect on LS, which is an important effect on LS in addition to the indirect effect. Hence, H4 is accepted.

In the moderation analysis, the effect of peer financial comparison on life satisfaction is negative when social media usage is high, as indicated by the negative moderation effect of social media usage intensity ($\beta = -0.242$, $t = 2.114$, $p = 0.035$). This suggests that the detrimental effects of financial comparison on life satisfaction increase with social media use. That is, for students who spend more time on social media, the more they compare themselves to others regarding finances, the more their life satisfaction decreases. Therefore, H5 is supported.

The model also exhibits strong explanatory power ($R^2 = 0.496$ for self-esteem and 0.644 for life satisfaction, see figure 2). This suggests that peer financial comparison accounts for a significant amount of the variation in self-esteem, and self-esteem, in turn, accounts for a significant amount of variation in life satisfaction as well as peer financial comparison.

Figure 2: Path Model Results



DISCUSSION

The first aim of this research was to investigate the negative effect of peer financial comparison on the life satisfaction of female university students. The results provide clear confirmation of this expectation, indicating that the greater the extent of financial comparison, the lower life satisfaction. This outcome may be explained by the Social Comparison Theory (Festinger, 1954), which posits that upward comparisons tend to lead to dissatisfaction rather than self-improvement. It also aligns with previous empirical research showing that viewing idealised versions of other people's lives, especially on social media, is detrimental to subjective well-being (Sim & Prihadi, 2020; Vogel et al., 2014). Of particular interest, however, is the attention given to the comparison of finances as a unique type of comparison. The present findings suggest that financial comparison may have a more psychological impact, as previous studies have focused on appearance or a general social comparison. Perhaps because financial success is viewed as a proximal measure of success and life achievement. In some settings, like Tanzania, where economic differences are more apparent and impactful, the comparisons could be even more potent and have a more adverse effect. This adds to the literature by emphasizing the need for domain-specific comparisons and against the background of a more general view on social comparison.

The second goal was to investigate if peer financial comparison had a detrimental impact on self-esteem. This relationship is strongly supported by the results, which show that those who compare their financial situation to others' frequently have lower self-esteem. This is in line with Self-Determination Theory, which states that perceived competence and self-worth are important factors for psychological well-being (Deci & Ryan, 2000). This feeling of inferiority seems to be internalised and produces a lower self-evaluation when people feel poor. Empirical research also has documented a correlation between exposure to idealised lifestyles on social media and reduced self-esteem, particularly among young adults (Qadah, 2023; Szcześniak et al., 2022). The relationship was also

strong in this study, indicating that it may be particularly influential on self-worth in financial comparisons. Perhaps this is because financial status is closely related to perceptions of independence, ability and future prospects and thus is a sensitive domain for comparison. This discovery strengthens the internal construction of self-esteem and the social influence of it, especially in a digitally mediated space.

The third goal was to find out if there is a positive relationship between self-esteem and life satisfaction. The results support this association with self-esteem being positively related to life satisfaction. This finding is also supported by literature review, in which self-esteem has always been found to be a critical factor influencing subjective well-being (Aziz et al., 2021; Diener et al., 1985). The contribution of the present study is, however, to better understand the dynamics of self-esteem in a larger relationship context. Self-esteem is not a stand-alone predictor but a mechanism by which other social experiences, like financial comparisons, can be converted to a general evaluation of life. This helps create a more holistic framework in which psychological health and functioning is influenced by the interplay between one's internal self-views and their external environments.

The fourth aim was to investigate the mediational effect of self-esteem in the process of peer financial comparison and life satisfaction. The findings suggest that this relationship is mediated, to a certain extent, by self-esteem, meaning that there is a direct link between financial comparison and life satisfaction, in addition to the indirect link. Previous studies also showed that self-esteem is an important mediator between social comparison and well-being outcomes (Sim & Prihadi, 2020; Cui et al., 2025), which is consistent with the results of this study. But what is important is the presence of partial instead of full mediation. It suggests that the connection is partly due to the self-esteem but there are other mechanisms that might play a role. For example, feeling jealous, angry or unfairly treated can impact life satisfaction whether or not it affects self-esteem. This is a shortcoming of the current theoretical explanations that tend to focus on cognitive routes and neglect affective processes. The results thus suggest there are further mediating variables to be considered in future research that may reflect the emotional aspects of financial comparison.

Last, the aim of the study was to examine the role of the intensity of social media use as a moderator between peer financial comparison and life satisfaction. The results support the moderating effect and show that the life satisfaction negatively associated with financial comparison becomes more pronounced as the amount of the social media increases. This finding is similar to the Uses and Gratifications Theory that posits that the effects of media are dependent on the amount and type of involvement with the media (Katz et al., 1973). It also matches empirical studies that revealed that high social media consumption leads to greater exposure to idealized content and a greater impact on adverse psychological consequences (Kross et al., 2013; Verduyn et al., 2017). The key point here is that it's not social media per se that is the cause of poorer well-being, but how it functions as a kind of amplifier of comparison processes already occurring. This moves the conceptual debate from a negative perspective of social media, to one of finding out how and when it becomes problematic. It implies that interventions should be directed at not just decreasing use, but also at increasing more conscious and critical use of content on the Internet.

These findings, as a whole, make important contributions to theory in a number of ways. First, they expand Social Comparison Theory in accounting for a unique and potent domain of comparison, financial comparison, possessing unique psychological implications. Second, they can help integrate SCT and SDT, demonstrating how comparisons can impact upon SDT's internal psychological needs and consequently well-being. Third, they emphasize the role of context in the intensity of such relationships, such as social media intensity. Meanwhile, it has been found that there are gaps in current frameworks, which do not focus on contextual amplification and emotional processes. This

indicates the need for a more wide-ranging models that will bring together the mental, emotional, and ecological aspects of social comparison.

On the whole, the results confirm the known theoretical associations and provide fresh insights into the role of financial comparison and the conditional effects of social media. It offers a more intricate view of how digital environments influence psychological welfare and the necessity of taking into account individual and contextual variables in future studies.

CONCLUSION AND RECOMMENDATIONS

Conclusion

The aims of this study were to explore the role of peer financial comparison in female university students' life satisfaction, the mediating role of self-esteem, and the moderating role of social media usage intensity. Findings present a coherent and comprehensible story. When it came to peer financial comparison, the results showed that it had a significant negative direct effect on life satisfaction and a significant negative indirect effect via its negative relation to self-esteem. Simultaneously, the intensity of social media use was found to exacerbate this association, with greater use increasing the detrimental impact of financial comparisons on well-being. These findings collectively indicate the interplay among social comparison processes, internal psychological mechanisms, and the digital environment in shaping students' life satisfaction.

The study contributes in several important ways on the theoretical level. First, by showing that financial comparison is a unique and significant domain of comparison and largely under-researched, it builds on the Social Comparison Theory. Although much of the literature has emphasized appearance or social comparison in general, this study indicates that there may be more serious implications for financial comparison due to its relationship to more general success perceptions and life achievement. Secondly, the results presented here are consistent with the idea that Social Comparison Theory can be combined with Self-Determination Theory and that external comparisons are internalized by means of self-esteem and that in turn influences life satisfaction. This strengthens the point that there is no single factor that makes a person well, but it is how a person reads and understands themselves. Third, the study helps expand research on digital environments by demonstrating that the intensity of social media use serves as a contextual amplifier of well-being rather than a direct indicator of it. This points to the need for more complex theoretical models that are multidimensional and involve both psychological and contextual elements.

To conclude, this study highlights the growing significance of financial comparison in the digital age and its effects on students' well-being. It provides deeper insight into how and in what situations these effects occur, highlighting the importance of self-esteem and social media use. The results not only help to develop theory, but can also be of practical value for creating healthier and more supportive university settings.

Recommendations

Digital well-being and financial awareness programmes should be considered part of student support services at universities. Education about critical awareness of content on social media platforms and a realistic perception of what financial success is can minimise the negative impacts of comparison. Counselling services should also aim to increase self-esteem and resilience, which seem to be important for protection against the negative impacts of financial comparison.

Universities should also organize regular seminars, workshops, and awareness campaigns focusing on responsible social media use and healthy financial behaviours. Such programmes can help students understand that social media often presents idealized versions of reality that may not accurately reflect individuals' actual financial circumstances. Student support centres should collaborate with financial education experts and mental health professionals to provide integrated interventions that address both financial awareness and psychological well-being.

Peer support and mentoring initiatives may also be useful in creating supportive environments where students can openly discuss financial challenges, academic pressures, and personal development. Such initiatives may reduce feelings of isolation and discourage unhealthy comparison tendencies. In addition, universities should encourage students to engage in activities that strengthen personal development, self-confidence, and goal setting, thereby reducing dependence on external validation derived from social comparisons.

Policy and Practical Implications

The findings have significant implications for universities, policymakers, educators, and mental health practitioners. The negative influence of peer financial comparison on life satisfaction suggests that universities should expand student support services beyond academic concerns to include psychological well-being and financial awareness. Universities may consider incorporating digital well-being programmes, financial literacy workshops, and counselling interventions that help students critically evaluate social media content and develop healthier attitudes toward financial success. Such initiatives may reduce the tendency to engage in harmful financial comparisons while promoting greater self-confidence and emotional resilience among students.

For policymakers and educators, the findings highlight the importance of recognizing social media as an influential factor in shaping young people's perceptions, aspirations, and psychological well-being. Educational policies and youth development programmes should promote responsible digital engagement and encourage critical awareness of the idealized lifestyles frequently portrayed online. Integrating financial literacy and digital literacy into educational curricula can equip students with the knowledge and skills necessary to manage personal finances effectively and maintain realistic expectations regarding wealth and financial achievement. Such interventions may contribute to healthier financial behaviours and improved well-being among young adults.

The findings also provide important implications for mental health practitioners. Since self-esteem was found to mediate the relationship between peer financial comparison and life satisfaction, interventions aimed at strengthening self-worth and resilience may help reduce the adverse effects of financial comparison. Counsellors and psychologists working with university students should pay greater attention to issues related to social media exposure, financial stress, and comparison-related concerns when designing prevention and intervention programmes. Collectively, these findings underscore the need for collaborative efforts among universities, policymakers, educators, and mental health professionals to foster healthier digital environments and improve the overall well-being of university students.

Limitations and Areas for Further Studies

Nevertheless, the study does have some limitations. The first is that with a cross sectional design, causal inferences cannot be drawn. The theoretical approach helps to explain the direction of relationships, but longitudinal studies would be more convincing in terms of causal relationships. Second, self-reported data may be subject to a response bias, especially in the self-esteem and life satisfaction domains. Third, the findings of the study might not be generalizable beyond the sampled universities as convenience sampling was used. The study involved several institutions, but the sample might not fully represent all the students in the university/Tanzania. Furthermore, only

female students were studied, although this was deliberate, which limits the possibilities for comparing gender differences.

Future studies could be conducted to overcome these limitations in several ways. Longitudinal studies would be useful to gain a deeper understanding of the nature of financial comparison and how it changes over time, and how it impacts psychologically. Experimental designs might also be more directly used to investigate causal mechanisms. More mediating variables should be investigated, such as envy, financial stress, or perceived social inequality, to gain a better understanding of the pathways involved. Comparing these relationships across various cultural and economic settings would also be interesting for determining the extent of generalisation. Lastly, future research may be expanded to include male subjects, and/or comparative research may be used to better understand the differences between male and female financial comparison and their impact.

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Authors' Contribution

Hamza Hussein Malombe conceptualized the study, developed the research design, collected and analysed the data, interpreted the findings, and prepared the manuscript. The author read and approved the final version of the manuscript.

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