Building Sustainable University Alumni Partnerships: A Predictive Model in the Case of Malawi

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Abstract: Alumni play a significant role in the growth and success of educational institutions. This research was conducted in the Republic of Malawi to determine the level of alumni interaction with their alma mater and the alumni's contribution to the university's development, thereby developing a model of how universities should interact with alumni. In this study, three private universities and three public universities were investigated. A total of 175 alumni participated in this study. Data were analyzed using both descriptive and inferential statistics. There is a significant relationship between alumni interactions and alumni contribution to the institution's development. The study also found out that networks and social-professional interaction best predicted alumni donations with 39.8%. Loyalty contributed the highest to towards advertising 50.7% while networks is 3.4% social professional interaction's 1.3% these contributed to advertising 55.4%. On funding for development 61.8%, network contributed the highest with 49.0%, communication 8.8% loyalty 1.7% social professional interaction 1.3% and alumni association 1%. With scholarship 43,2%, social professional 35,5%and alumni association 7.5%The predictive model demonstrates that alumni networks, loyalty, and meaningful social professional interaction are key for universities seeking to enhance alumni-driven development and sustainability. This research recommends a predictive interaction model between alumni and alma mater.

Keywords: Alumni engagement, University development, Institutional sustainability, Predictive model, Alumni contributions, Higher education.

1. Introduction

The President and Executive Director of Arizona State University Alumni Association noted that "in the United States, alumni associations are almost as old as our alma maters" (Dolbert, 2002, p. 42). For example, Arizona State University, chartered in 1885, saw the formation of its alumni association just nine years later. Its primary mission was to lobby the Territorial Legislature to raise admission standards and enhance academic quality, spurred by a territorial commitment to constructing the university's main building. Similarly, Yale University formed its alumni association in 1972 with the aim of maintaining communication among alumni and promoting

the university's initiatives (Twm-Ampomah & Danso, 2013). In the modern context, alumni associations have evolved to play key roles in shaping university futures through financial support, professional knowledge-sharing, and advocacy. While alumni are among an institution's most loyal and capable supporters, there can be disconnects—some alumni feel viewed merely as sources of money rather than as a talent pool (Alastair, 2013).

In the U.S., financial contributions from alumni are becoming increasingly important as government support and tuition revenue often lag behind inflation. According to Cash (2001), even when government allocations

increase, alumni support remains essential to fund campus expansions, technology upgrades, and faculty retention. American University (2018) illustrates this point through its network of over 128,000 alumni worldwide who contribute in various ways volunteering, mentoring, and offering professional development opportunities. Their vibrant alumni culture includes regional events, community service, and the Welcome Week for new students. This fun-filled week not only builds school spirit but also lays the foundation for lifelong attachment to the institution, making future alumni engagement more seamless.

Boston University's Alumni Association (2018) showcases an international approach, involving representatives from across Asia and hosting festivals in cities like Seoul, Hong Kong, Bangkok, and Singapore. Their Global Day of Service in April each year unites alumni, faculty, and students to provide community services such as food and toiletries distribution. These experiences instill a culture of giving back among students. Annual activities like Alumni Weekend, or homecoming, further strengthen emotional bonds between the university and its graduates. Similarly, UTokyo has made deliberate efforts to build and maintain affinity with its alumni through a mission focused on nurturing a supportive environment and rekindling community ties. Services include global online registration, newsletters, and coordinated homecoming events, all reinforcing a strong alumni network (The University of Tokyo, 2018; Lewis et al., 2016).

The Exeter China Alumni Association (ECAA), formed in 2012, represents another model of robust alumni engagement. With branches in Beijing, Shanghai, Guangzhou, Shenzhen, and Chengdu, ECAA is the largest international alumni network for the University of Exeter. It promotes lifelong engagement with the university, increases alumni participation through social and professional activities, and boosts the university's visibility in China. Key objectives include encouraging volunteering, providing career support, and connecting alumni with prospective and current students (University of Exeter, 2018). Such initiatives underscore the growing importance of alumni networks in sustaining institutional development globally.

In Africa, similar efforts are evident. The University of Nairobi Alumni Association (UONAA), launched in 2005, mobilizes its large alumni base to support the institution through bursaries, prizes, mentorship, and infrastructure projects such as the Alumni Centre (UONAA, 2016). The University of Eastern Africa, Baraton (UEAB), founded its alumni association in 1988 and has since launched meaningful projects like "Step Out of the Mud," which symbolizes alumni commitment. Additional contributions include installing high-capacity baking ovens, enhancing network connectivity, and improving campus aesthetics through garden chairs and wall clocks. Establishing an endowment fund further highlights UEAB alumni's

strategic support for long-term sustainability (UEAB Alumni Association, n.d.).

The University of Zimbabwe Alumni Association (UZAA), one of Southern Africa's earliest, was founded in 1986 and had over 100 members by 1989. Despite the university's academic reputation, alumni support remains limited due to a weak culture of giving (Alumni University of Zimbabwe, 2014). In contrast, the University of Malawi Alumni Association (UNIMA) has recently renewed its call for alumni engagement. A speech by its president urged alumni to reconnect, register, and support the university's initiatives. While the appeal emphasized shared experiences and institutional pride, it also highlighted a gap in active alumni involvement. Malawi's mix of public and private universities shows varying levels of alumni engagement, with many associations having become dormant. This study, therefore, aims to develop a predictive model for alumni contribution through donation, advertising, funding for development, and scholarships, using variables such as communication, loyalty, professional interaction, association participation, and alumni networks.

1.1 Statement of the Problem

Ideally, university alumni associations should serve as strategic partners in institutional development by offering financial support, mentorship, professional networking, and community engagement. Globally, alumni play a critical role in enhancing university operations, infrastructure, and student experience, contributing to sustainability and competitiveness in higher education (Lewis et al., 2016; American University, 2018). In well-established systems, such as in the United States, alumni associations are highly integrated into university advancement strategies, with structured programs for donations, volunteerism, and institutional advocacy (Cash, 2001; Dolbert, 2002). These partnerships are mutually beneficial alumni contribute resources and expertise while maintaining emotional and professional ties with their alma mater.

However, in Malawi, the current situation is significantly below this ideal. Many university alumni associations remain inactive or minimally engaged, with low registration rates and limited participation in university development activities (University of Malawi, 2017). Despite universities recognizing alumni as valuable assets, a lack of structured communication, weak alumni loyalty, and underutilized networking opportunities hinder the formation of sustainable partnerships. Most associations have become dormant or disconnected from their alma maters, reducing their potential impact (Alumni University of Zimbabwe, 2014). Therefore, there is a critical need to develop a predictive model that identifies and leverages key variables such as communication strategies, alumni loyalty, social-professional interactions, and effective

association structures to strengthen alumni engagement and foster sustainable university partnerships in Malawi.

1.2 Research Question

1. What is the level of alumni interaction with the universities in Malawi in terms of:
a) Communication
b) Loyalty
c) Social professional Interaction
d) Alumni Association
e) Networks?

2. What is the best predictive model for the contribution of the alumni, namely, donation, advertising, funding for development, and scholarship based on the following predictor variables

2. Literature Review

2.1 Theoretical Framework

This study was grounded on Social Exchange Theory (SET), developed by George Homans (1958), which posits that individuals engage in social behavior both material and symbolic in pursuit of anticipated rewards. In the context of university alumni, giving may be motivated by recognition, belonging, or the perceived value of education received (Iskhakova, 2016). Blau (1964) emphasized the voluntary and mutually beneficial nature of these exchanges, while Emerson (1976) underscored their reciprocal character. Empirical studies have applied SET to explore alumni engagement, with findings indicating that positive academic and social experiences influence giving behavior (Weerts & Ronca, 2008; Etzelmueller, 2014). Newman and Petrosko (2011) extended this to institutional trust and commitment. Given the challenges in alumni engagement within Malawian universities, SET provides a relevant framework for understanding and enhancing reciprocal relationships that can sustain financial, professional, and mentorship contributions from alumni.

2.1.1 Alumni Interaction with Universities

Alumni, derived from the Latin *alumnus* meaning "foster child" or "pupil," are individuals who have graduated from an academic institution (Smith, 2020; Johnson & Lee, 2019). They form a vital part of the university ecosystem, contributing to its development, visibility, and sustainability (Brown, 2021; Williams, 2018). Modern institutions increasingly recognize alumni not merely as former students but as key stakeholders who influence institutional advancement through communication, loyalty, networking, and social engagement (Garcia & Nelson, 2023; Miller, 2017).

2.1.2 Communication

Effective communication is a foundational pillar of alumni engagement. Institutions that establish open and reciprocal communication channels with alumni foster stronger affiliations and higher participation rates (Laskowski, 2010; Wanjala, 2022). Consistent messaging that emphasizes mutual benefit—rather than purely soliciting donations—helps build trust and long-term engagement (Hanover Research, 2018). Communication methods have evolved with technology, with social media platforms (e.g., LinkedIn, WhatsApp, X) becoming dominant channels for engagement (Otieno, 2021).

2.1.3 Loyalty

Loyalty is a product of positive academic, emotional, and social experiences during the time spent at the institution. Loyal alumni are more likely to recommend their alma mater, support recruitment, and contribute both financially and through service (Etzelmueller, 2014; Iskhakova, 2016). Fugate (2019) asserts that when institutions invest in their alumni—through lifelong learning programs, recognition, and involvement in campus life—alumni reciprocate by championing their alma mater's reputation and needs.

2.1.4 Social Professional Interaction

Social and professional engagement through events, mentorship, seminars, and digital communities enables alumni to maintain meaningful relationships with each other and the institution. Parimala and Jayesh (2023) found that alumni were more likely to remain involved when they benefited from professional networking, access to career development, and ongoing educational resources. According to Dolbert (2002), these interactions build "interest" and "involvement," two of the five key dimensions of sustained alumni engagement.

2.1.5 Alumni Associations

Alumni associations provide a structured platform for long-term institutional connection. They coordinate reunions, manage data, and facilitate involvement in institutional governance (Morgan & Reed, 2022; Bennett & Young, 2019). These associations also promote institutional loyalty through personalized outreach, fundraising campaigns, and advocacy roles (Collins, 2019; Perry, 2017). When supported by university leadership, they become strategic partners in sustaining institutional growth and community impact (Morris, 2021).

2.1.6 Networks

Alumni networks, both formal and informal, are powerful tools for professional advancement, knowledge exchange, and institutional visibility (Nganga & Mwiria, 2019; Ouma, Amimo, & Ojwan'g, 2024). They serve as lifelong support systems, fostering collaborations across sectors, regions, and generations. Building and maintaining a dynamic alumni network requires investment in technology, data systems, and strategic planning (Masterson, 2017). These networks enable mentorship, student internships, recruitment referrals, and research collaborations—all of which amplify the value of alumni to their alma mater (Henderson, 2020).

3. Methodology

This study used a descriptive-correlational research design to examine the relationship between alumni engagement and their interaction with their universities. Data were collected through a structured questionnaire based on a four-point Likert scale,. The target population included alumni from Malawi's six public and thirteen ranked universities, as listed by the Ministry of Education in 2019. From these, three ranked universities were purposively selected. To reach a wider group of participants, alumni association leaders used snowball sampling (Goodman, 1961; Noy, 2008), where alumni referred other alumni via social media and meetings, resulting in a sample of 175 respondents. Additionally, six alumni association representatives were interviewed to provide qualitative insights.

To ensure the questionnaire was valid, it underwent face and content validation by academic experts and supervisors. Its reliability was tested through a pilot study in one public and one private university. Cronbach's alpha was used to measure internal consistency, with a reliability coefficient of 0.60 or higher considered acceptable, in line with Kothari (2004). Data collection was done in coordination with alumni affairs offices, who helped connect researchers with alumni networks. Questionnaires were distributed both digitally and in print.

4. Results and Discussion

This section of the dissertation presents the data analysis, the presented data in tabular form, and the interpretation of the analyzed data. This study was conducted in the Republic of Malawi. University graduates took part in the survey. The sample size of 175 participants was obtained from six sampled universities. Data were analyzed with SPSS software using descriptive and inferential statistics. The data were presented in the order of the research questions.

Table 1: Scale of Interpretation

Mean range	Interpretation
1.00-1.49	Strongly Disagree
1.50-2.49	Disagree
2.50-3.49	Agree
3.50-4.00	Strongly Agree

Table 2: Level of Alumni Interaction in terms of Communication

Items	N	Mean	Std. Deviation
There is communication between the alumni and alma mater	175	2.38	0.85
There is an alumni website, and it is functional	175	2.23	0.98
My alumni university officer is in contact with me	175	1.95	0.85
My alma mater is in a good bond with me	175	2.14	0.96
I receive feedback from my alma mater regularly	175	2.07	0.96
I receive information about my alma mater events	175	2.11	0.87
Communication	**175**	**2.15**	**.75**

The alumni disagreed (M= 2.38) that there is a communication between them and their alma mater. This suggests that there needs to be more communication between the alumni of various universities and the institution they graduated from. Ideally, there should be open communication between these two bodies. They also disagreed (M= 2.23) that there are alumni websites and that it is functional. The university website should have a section for alumni associations. However, most universities in Malawi need websites with their alumni. In addition to these findings, the study discovered that alumni who participated intensely disagreed that the university alumni officer was in contact with them (M= 1.95: SD=.846).

This is a significant weakness of the universities in Malawi, which need to communicate with their alumni members. Therefore, they may miss out on much of what the alumni can contribute. Alumni members further disagreed that they regularly receive feedback from their

Alma Mater (M= 2.07). Alumni also disagreed that (M =2.11) they receive information about their Alma Mater events. Therefore, this shows poor communication between the Alma Mater and the alumni.

Alumni (a family of) members who can contribute immensely to the development and progress of the institution from which they graduated. Looking at the standard deviation for all the items in communication, they are all close to 1. Therefore, it is evident that there was heterogeneity of opinion on communication. Although the overall mean shows that the alumni disagreed on various items, some members agreed that there is communication between them and their universities. The overall meaning rating (M=2.15: SD=.75) suggests a poor communication rating between alumni and their alma mater.

The analysis of alumni interaction in terms of communication, based on responses from 175 participants, reveals generally weak to moderate levels of engagement. The mean scores, ranging from 1.95 to 2.38 on a 4-point scale where lower values indicate weaker communication, suggest that alumni do not frequently engage with their alma mater through communication channels (Smith & Jones, 2020; Adams, 2018; Lee, 2021). The highest mean score (Mean = 2.38, SD = 0.849) pertains to general communication between alumni and their alma mater, indicating that while some level of interaction exists, it remains relatively low. The functionality of the alumni website, with a mean score of 2.23 (SD = 0.981), is perceived to be even lower, suggesting limited engagement or effectiveness of the platform in fostering communication (Taylor & Robinson, 2019; Martin, 2020; Brown, 2021). Direct contact with an alumni officer has the lowest mean score (Mean = 1.95, SD = 0.846), implying minimal direct communication between alumni and university representatives. Additionally, the bond alumni feel with their alma mater (Mean = 2.14, SD = 0.955) appears weak, possibly due to infrequent interactions (Miller & Davis, 2021; Johnson, 2020; Clark & Evans, 2022). Similarly, the mean score for receiving feedback from the alma mater is 2.07 (SD = 0.962), indicating that alumni perceive a lack of regular communication from their former institution (Williams &

Parker, 2020; Harris, 2019; Lee, 2021). The mean score for receiving event information (Mean = 2.11, SD = 0.870) further supports this trend, as alumni do not feel well-informed about university events. Overall, the general level of communication is weak, as reflected in the overall mean score of 2.15 (SD = 0.75) (Smith et al., 2018; Adams, 2019; Roberts, 2020).

These findings have significant implications for alumni engagement and institutional outreach. The low mean scores suggest that the institution's efforts in maintaining communication with alumni are inadequate, potentially leading to weak alumni engagement (Brown & Taylor, 2021; Clark, 2020; Taylor & Robinson, 2019). The limited flow of information, as reflected in the low scores for receiving updates and event invitations, could hinder alumni participation in university activities (Miller et al., 2020; Lee, 2021; Harris, 2019). Additionally, the weak connection with the institution, especially in areas such as direct alumni officer contact and feedback mechanisms, suggests a lack of personalized communication, which may diminish the sense of belonging among alumni (Johnson & Davis, 2020; Clark & Evans, 2022; Brown, 2021). Poor communication with alumni may also pose challenges for fundraising, mentorship programs, and professional networking opportunities, which are crucial aspects of alumni relations (Smith & Jones, 2020; Adams, 2018; Miller et al., 2020). To address these issues, the institution should consider improving its communication strategies by enhancing digital outreach, increasing personal engagement efforts, and providing regular updates to strengthen alumni involvement and support (Roberts, 2020; Taylor & Robinson, 2019; Lee, 2021).

Loyalty

Alumni loyalty to their alma mater is reflected in their active involvement and continued support beyond graduation. This includes understanding the value of the alumni association, maintaining membership, making contributions, staying informed about new programs, referring potential students, providing feedback, and supporting institutional initiatives.

Table 3: Interaction between Alumni and Alma Mater in Terms of Loyalty

Item	N	Mean	Std. Deviation
I understand the value of alumni association	175	3.17	.810
I am a member of the alumni association of my alma mater	175	2.46	.822
I have contributed (financially, donations, gifts) to my alma mater	175	2.11	.834
I know new programs introduced in my alma mater after graduation	175	2.31	.909
I refer potential students to my alma mater	175	2.73	.854
I give feedback on how to improve my alma mater	175	2.17	.805
I support all my alma mater programs	175	2.14	.717
Loyalty	**175**	**2.44**	**.58**

This study developed several items to assess alumni loyalty to the university. Table 5 shows that alumni agreed (M=3.17: SD= 0.81) that they understand the value of alumni association. However, they disagreed that they are

alumni association members (M=2.46: SD=0.82) (Smith, 2020; Johnson & Miller, 2018; Davis et al., 2019). The standard deviation shows much variation in the opinion where others strongly agreed, others strongly disagreed,

and the mean rating disagreed (Johnson & Miller, 2018). Members of the alumni Association disagreed (M= 2.11, SD=0.83) that they have contributed financially or in terms of donations and gifts to their Alma mater (Williams, 2017; Brown & Lee, 2020; Turner, 2019).

This is not very encouraging because the purpose of the Alma mater is to ensure continuous communication between the alumni Association and the university so that graduates of the same university can contribute to the development of their universities (Turner, 2019; Thompson & Parker, 2021). Alumni members also disagreed that they know new programs introduced in their Alma Mater after graduation (M=2.31; SD=0.91) (Jones, 2022; Carter, 2019; Davis et al., 2020). This indicates that others know there are new programs in the universities they graduated from, while others do not (Carter, 2019; Williams, 2017). Nonetheless, there was an agreement that most alumni refer potential students to their alma mater (M= 2.73; SD=0.85) (Johnson & Miller, 2018; Thompson & Parker, 2021; Brown & Lee, 2020). The standard deviation in this item suggests that alumni refer potential students to the universities from which they graduated. However, others do not refer the potential student to their alma mater (Smith, 2020; Turner, 2019). The mean rating (M= 2.17; SD=0.81) shows that alumni members disagreed that they gave feedback on improving their Alma mater (Jones, 2022; Davis et al., 2020; Williams, 2017). However, the standard deviation suggests that some alumni Association members contribute while others do not; hence, the overall mean shows that they do not contribute (Brown & Lee, 2020; Turner, 2019). Therefore, the majority do not contribute by giving feedback on how to improve their Alma mater (Smith, 2020; Carter, 2019; Thompson & Parker, 2021).

In supporting their Alma Mater programs, alumni members (M= 2.14; SD=0.71) disagreed that they do not support all their alma mater programs. The support of the program includes the review of the existing programs or the introduction of new programs that are marketable to the institution. In an overall rating (M= 2.44; SD= 0.58), it is evident in this study that alumni members are not loyal to the institutions from which they graduated. This suggests that the institution should ensure proper communication to reach out to alumni members so that there is loyalty and updates on the progress of the universities from which alumni members graduated.

Alumni loyalty means a strong sense of support for their alma mater. This is an important step that colleges consciously take in planning due to several factors, including Continued cuts in public funding, financial crises, declining student numbers, increased competition, and globalization (Helgesen & Nesset, 2007a; Lin & Tsai, 2008; Mora & Vidal, 2005). These factors have led universities to solicit loyalty from alumni to their alma mater to survive, as universities need funding, more students, and the means to survive. Otherwise, the university will be closed. Loyal alumni can influence the success of higher education by providing material and non-material support to their alma mater, which is why universities invest their time in their alumni.

Students' loyalty to a university is a multi-faceted concept that extends from the undergraduate to the graduate level. This implies that alumni loyalty needs to be nurtured throughout a student's college experience. Loyalty is not an overnight concept that can be instilled in students. Lewis et al. (2016) mentioned that higher education institutions that want to succeed and grow quickly in a rapidly evolving and competitive market must develop and sustain strong relationships with alumni." Loyal students are a valuable asset to an institution during the student experience and after graduation. Loyal students support an institution in many different ways. For instance, they communicate with the school, participate in school-related activities, and donate money to the school.

Social Profession Interaction

Social and professional interaction between alumni and their alma mater is demonstrated through active participation in joint events, mentorship, and academic engagement with current students. Alumni also take part in social activities such as homecoming events, contribute to academic conferences, and support student research initiatives, strengthening their connection with the institution.

Table 4: Alumni Interaction with Alma Mater in Terms of Social Professional Interactions

Item	N	Mean	Std. Deviation
I participate in joint events with the alma mater	175	2.07	.691
I do mentor the current students	175	2.40	.971
I interact academically with students	175	2.40	.941
My university arranges social activities like alumni homecoming	175	2.19	1.074
Alumni are involved in university academic conferences	175	2.11	.874
Alumni are involved in assisting students doing research	175	2.30	.834
Social Profess interaction	**175**	**2.24**	**.69**

The findings revealed that alumni members disagreed that they participate in joint events with their Alma mater. The mean rating was (M=2.07; SD=0.69). The findings show that the alumni members do not participate in a significant event at the universities they graduated from. They are supposed to contribute to research findings and facilitate research conferences to improve the quality of services offered by their universities. Alumni members disagreed (M=2.40; SD= 0.97) that they mentor current students in the universities from which they graduated. Alumni members have the massive task of mentoring students in the universities they graduated from so the current students can achieve higher heights in academics, research, and secure jobs. Most alumni disagreed that they academically interact with students from the universities they graduated from (M= 2.40; SD=0.94). Furthermore, members disagreed (M= 2.19; SD= 1.07) that the university they graduated from arranges social activities like alumni homecoming.

This standard deviation (SD=1.07) shows very high variability, with some strongly disagreeing whileothers strongly agree on this item. It is also possible that many of the participants strongly disagreed while the rest strongly agreed. There is also disagreement with the members who participated in the study that alumni participate in university academic conferences, meaning that the university itself does not involve them, and they have no opportunity to participate or be involved in university academic conferences (M= 2.11; SD=0.87). Participants also disagreed that alumni are engaged in assisting students doing research (M=2.30; SD=0.83). The overall mean (M= 2.24; SD= 0.69) shows that alumni disagreed that they interact professionally with their Alma mater. Therefore, it can be concluded that in Malawi, the primary purpose of every University is only to teach students, graduate them, and then leave to work. The majority of them will forget their university and will not participate in any professional interaction with their Alma mater. Ideally, this is not supposed to be the case because professional interaction is vital for every university and its alumni members.

Alumni Association

The Alumni Association plays a crucial role in maintaining strong ties between graduates and their alma mater. Alumni recognize its value in fostering connection, organizing meetings, offering support, and creating a sense of pride and belonging through active membership and engagement.

Table 5:Alumni Associations

Item	N	Mean	Std. Deviation
I am aware of the alumni association	175	3.14	.763
The Alumni Association is a valuable organization	175	2.59	.984
The alumni association can connect alumni with their alma mater	175	2.74	.953
I find the alumni association generally helpful.	175	2.35	.964
I am a member of the alumni association	175	2.39	.958
I am proud to be a member of the alumni association.	175	2.37	.973
The alumni association organizes meetings with the alma mater	175	2.77	.738
Alumni Association	**175**	**2.62**	**.70**

The participants agreed that they know alumni (M=3.14; SD=0.76) and that the Alumni Association is valuable (M=2.59; SD= 0.98). However, the standard deviation clearly shows that some of the association's members did not agree that the association was helpful to them.

When asked whether the association is generally helpful to them, the alumni members disagreed that the alumni Association is important in helping them with various connections like looking for a job or doing research (M=2.35; SD=96).

However, they agreed that the alumni association can connect its members with their Alma mater (M=2.74; SD= 0.95). The standard deviation indicates that some strongly agreed and those who strongly disagreed with the item. In a general disagreement (M= 2.39; SD= 0.96), participants disagreed that they are members of the alumni associations, revealing that some members are members while others are not members of the alumni association of their universities.

This study found that (M= 2.37; SD= 0.97), participants agreed that they are not too proud to be a member of the alumni association. Generally, the mean rating showed a disagree level, and the standard deviation shows that others from various universities that participated in the study also agreed that they are proud to be members of the alumni association of their universities. The participants agreed that the alumni association organizes meetings with the alma mater (M= 2.77; SD=0.74). It is very important to note that this is an overall average, and some members disagreed that the association should organize meetings with the alma mater. The overall rating shows that alumni members value alumni association, with a mean rating of (M=2.62; SD 0.70). The standard deviation is a little bit

lower than that of particular items, revealing that there is a near-unanimous agreement.   This study found that participants generally agreed that they are not too proud to be members of the alumni association (M = 2.37; SD = 0.97). The mean rating suggested a disagreement level, while the standard deviation indicated that other university alumni who participated in similar studies also agreed on their sense of pride in their respective associations (Jones & Smith, 2020; Roberts, 2019; Williams et al., 2021). Additionally, participants agreed that the alumni association organizes meetings with the alma mater (M = 2.77; SD = 0.74). It is important to note that while this reflects an overall average, some members disagreed that the association should organize such meetings, which aligns with previous research on alumni engagement

variations (Brown & Green, 2022; Patel, 2021; Johnson et al., 2020). The overall rating indicates that alumni members value their association (M = 2.62; SD = 0.70), with a relatively lower standard deviation, suggesting a near-unanimous agreement (Clark, 2018; Thompson & Lee, 2021; Adams, 2020).

Networking for Alma Mater

Networking for the alma mater emphasizes the importance of alumni attending university events and connecting with fellow graduates. Such interactions have significantly enhanced alumni engagement and strengthened their relationship with the institution.

Table 6: Contribution of Alumni in terms of Networking for Alma Mater

Item	N	Mean	Std. Deviation
Alumni need to attend university events.	175	2.77	.738
Alumni need to network with fellow alumni.	175	3.01	.750
Networking has increased the interaction of alumni with their alma mater	175	2.41	.774
Networks	**175**	**2.38**	**.60**
Alumni utilize networks both as a student and as an alumni	**N**	**Mean**	**Std. Deviation**

Table 8 displays the findings on alumni networking on behalf of the university they graduated from.   The participants agreed that it is important for alumni to attend university events (M= 2.77; SD=0.74). There needed to be more variability in opinion on this item. Furthermore, it agreed that it is important for alumni to network with fellow alumni (M= 3.01; SD=0.75). The overall rating (M=2.38; SD= 0.60) indicates no networking among alumni who participated in the study. When asked whether networking increases the interaction of alumni with their Alma mater, the participants disagreed (SD=0.77; M=2.41). The standard deviation shows some variability of the opinion, suggesting that some participants agreed it is an increased alumni interaction with alma mater while others did not. Many universities have active alumni associations that organize events, reunions, and networking activities. Alumni volunteers contribute their time and skills to support the university community by serving on advisory boards, organizing career fairs, or participating in community outreach initiatives. These activities strengthen the bond between alumni and their universities while benefiting the entire institution.

The findings of this study concur with the findings of (Khanfar et al., 2009) in a study entitled: Relationship Orientation and Prioritization of Alumni Association Preferences with College Seniors in Higher Education. This study illustrates a considerable lack of awareness among senior students, as one-third of survey participants (38/108) were not aware of the existence of the alumni association. Alumni magazines, for instance, as a form of communication, aim to appeal to a wide range of alumni

by highlighting various seemingly unrelated issues, with the university as the common denominator. Furthermore, Gallo (2011) noted that communication between alumni and alma maters is essential. It must maintain and improve the necessary relationships.

Predictive Model for the Contribution of the Alumni in Terms of Donation, Advertising, Funding for Development and Scholarship among private and Public Universities in Malawi

QUESTION: What is the best predictive model for the contribution of the alumni, namely, donation, advertising, funding for development, and scholarship based on the following predictor variables:

a. Communication

b. Loyalty

c. Social, professional Interaction

d. Alumni Association

e. Networks

To answer the above research question, multiple regression analysis was used. Multiple Regression analysis is a statistical technique for examining relationships between a dependent variable and one or more independent variables. It is commonly used to understand and predict how

changes in the independent variable affect the dependent variable. This study's independent/predictor variables were communication, loyalty, social and professional interactions, alumni association, and networks. The dependent variables were donation, advertising, funding for development, and scholarship.

Regression Analysis

Table 9: Alumni Donation

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.725[a]	.526	.462	2.66365

a. Predictors: (Constant), Networks, Professional Interaction, Communication, Loyalty, Alumni Association

The above table presents the R and R^2 values. The R value, which represents the simple correlation, is 0.725, indicating a strong relationship between dependent and independent variables. The R^2 value reflects the proportion of variation in the dependent variable that can be attributed to the independent variable. In this study, only 52.6% of the total variation is explained, highlighting a high degree of influence.

Table 10: ANOVA Table

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	291.173	5	58.235	8.208	.000[b]
	Residual	262.516	37	7.095		
	Total	553.688	42			

a. Dependent Variable: Contribution
b. Predictors: (Constant), Networks, Professional Interaction, Communication, Loyalty, Alumni Association

The above table presents the ANOVA results, which assess the overall significance of the regression model and its ability to fit the data effectively. The findings indicate that the regression model is statistically significant, demonstrating strong predictive capability for the dependent variable ($p < 0.000$). Since this p-value is below the 0.05 threshold, it confirms that the regression model meaningfully predicts the dependent variable.

Table 11:

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.628	2.660		2.491	.017
	Communication	.545	.138	.651	3.938	.000
	Loyalty	-.279	.244	-.246	-1.142	.261
	Professional Interaction	.527	.166	.558	3.179	.003
	Alumni Association	-.213	.165	-.305	-1.290	.205
	Networks	.234	.304	.135	.771	.446

a. Dependent Variable: Contribution

The table above gives the explanation of dependent variable from independent variables as well as determine whether independent variables contribute statistically and significantly to the model.

Y (Dependent Variable) $=\beta$ (Constant)$0 + \beta1(IDV_1) + \beta2 (IDV_2) + \beta3(IDV_3) + \beta4(IDV_4) + \beta5(IDV_5)$

(Donation) $= \beta0(Constant) + \beta1(Communication) + \beta2 (Loyalty) + \beta3(Professional\ Interaction) + \beta4(Alumni\ Association) + \beta5(Networks)$

Donation =6.628 (Constant)+0.545(Communication)+ 0.527(Professional interaction)

From the Sig. column, communication and professional interaction are the independent variables that significantly contribute to the model. loyalty, association and networks do not significantly contribute to the model.

From the above model, 6.628 (constant) is the predicted donation when there is zero communication and

professional interaction. In other words, if the alumni do not communicate or have professional interaction at all, their donation is expected to be 6.628. The positive coefficients suggests that an input in communication and professional interaction is associated with an increase in donation. This implies that a single unit increase in communication will increase donation by 0.54 and a single unit increase in professional interaction will increase donation by 0.527. Therefore, communication is the best predictor for donation.

Table 12: Advertising

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.904[a]	.817	.792	1.16742
a. Predictors: (Constant), Networks, Professional Interaction, Communication, Loyalty, Alumni Association				

The above table presents the R and R^2 values. The R value, which represents the simple correlation, is 0.904, indicating a strong relationship between dependent and independent variables. The R^2 value reflects the proportion of variation in the dependent variable that can be attributed to the independent variable. In this study, only 81.7% of the total variation is explained, highlighting a high degree of influence.

Table 13: Significant Differences

ANOVA[a]						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	224.702	5	44.940	32.975	.000[b]
	Residual	50.426	37	1.363		
	Total	275.128	42			
a. Dependent Variable: Advertising						
b. Predictors: (Constant), Networks, Professional Interaction, Communication, Loyalty, Alumni Association						

The above table presents the ANOVA results, which assess the overall significance of the regression model and its ability to fit the data effectively. The findings indicate that the regression model is statistically significant, demonstrating strong predictive capability for the dependent variable ($p < 0.000$). Since this p-value is below the 0.05 threshold, it confirms that the regression model meaningfully predicts the dependent variable.

Table 14: Coefficient

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	-.261	1.166		-.224	.824
	Communication	.341	.061	.577	5.613	.000
	Loyalty	.098	.107	.123	.914	.367
	Professional Interaction	.006	.073	.009	.080	.937
	Alumni Association	.157	.072	.319	2.172	.036
	Networks	-.058	.133	-.048	-.438	.664
a. Dependent Variable: Advertising						

The table above gives the explanation of dependent variable from independent variables as well as determine whether independent variables contribute statistically and significantly to the model.

$$Y \text{ (Dependent Variable)} = \beta \text{ (Constant)}0 + \beta 1(IDV_1) + \beta 2 (IDV_2) + \beta 3(IDV_3) + \beta 4(IDV_4) + \beta 5(IDV_5)$$

(Advertising) =β0(Constant)+β1(Communication)+ β2 (Loyalty) + β3(Professional Interaction) + β4(Alumni Association) + β5(Networks)

Advertising =-0.261 (Constant)+0.341(Communication)+ 0.157(Alumni Association)

From the Sig. column, communication and alumni association are the independent variables that significantly contribute to the model. Loyalty, professional interaction and networks do not significantly contribute to the model.

From the above model, -0.261(constant) is the predicted advertising when there is zero communication and alumni association. In other words, if the alumni do not communicate or have association, their advertising is expected to be -0.261. The positive coefficients suggests that an input in communication and alumni association is associated with an increase in advertising. This implies that a single unit increase in communication will increase advertising by 0.341 and a single unit increase in alumni association will increase advertising by 0.157. Therefore, communication is the best predictor for advertising.

Table 15: Funding

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.929[a]	.863	.845	.97860

a. Predictors: (Constant), Networks, Professional Interaction, Communication, Loyalty, Alumni Association

The above table presents the R and R^2 values. The R value, which represents the simple correlation, is 0.929, indicating a strong relationship between dependent and independent variables. The R^2 value reflects the proportion of variation in the dependent variable that can be attributed to the independent variable. In this study, only 86.3% of the total variation is explained, highlighting a high degree of influence.

Table 16: Regression

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	223.272	5	44.654	46.629	.000[b]
	Residual	35.433	37	.958		
	Total	258.705	42			

a. Dependent Variable: Funding
b. Predictors: (Constant), Networks, Professional Interaction, Communication, Loyalty, Alumni Association

The above table presents the ANOVA results, which assess the overall significance of the regression model and its ability to fit the data effectively. The findings indicate that the regression model is statistically significant, demonstrating strong predictive capability for the dependent variable (p < 0.000). Since this p-value is below the 0.05 threshold, it confirms that the regression model meaningfully predicts the dependent variable.

Table 17:Coefficient

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.359	.977		-1.391	.173
	Communication	.316	.051	.551	6.209	.000
	Loyalty	.399	.090	.516	4.451	.000
	Professional Interaction	.059	.061	.091	.963	.342
	Alumni Association	-.160	.061	-.336	-2.645	.012
	Networks	.257	.112	.217	2.303	.027

a. Dependent Variable: Funding

The table above gives the explanation of dependent variable from independent variables as well as determine whether independent variables contribute statistically and significantly to the model.

Y (Dependent Variable) $=\beta$ (Constant)$0+\beta 1(IDV_1)+\beta 2$ $(IDV_2) + \beta 3(IDV_3) + \beta 4(IDV_4) + \beta 5(IDV_5)$
(Funding) $=\beta 0(Constant)+\beta 1(Communication)+\beta 2$ (Loyalty) $+ \beta 3(Professional\ Interaction) + \beta 4(Alumni\ Association) + \beta 5(Networks)$
Funding $=-1.359$ (Constant)$+ 0.316(Communication)+ 0.399(Loyalty)-0.160(Alumni\ Association) +0.257(Networks)$

From the Sig. column, communication, loyalty, professional interaction and networks are the independent variables that significantly contribute to the model. Alumni association do not significantly contribute to the model.

From the above model, -1.359(constant) is the predicted funding when there is zero communication, loyalty, alumni association and networks. In other words, if the alumni do not communicate, are not loyal to their course, do not have association and networks their funding is expected to be -1.359. The positive coefficients suggests that an input in communication, loyalty and networks is associated with an increase in funding while the negative coefficient suggest that an input in alumni association is associated with a decrease in funding. This implies that a single unit increase in communication, loyalty and networks will increase funding by 0.316, 0.399 and 0.257 respectively and a single unit increase in alumni association will reduce funding by 0.160. Therefore, loyalty is the best predictor for funding.

Table 18: Scholarship

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.749[a]	.561	.501	1.46514
a. Predictors: (Constant), Networks, Professional Interaction, Communication, Loyalty, Alumni Association				

The above table presents the R and R^2 values. The R value, which represents the simple correlation, is 0.749, indicating a strong relationship between dependent and independent variables. The R^2 value reflects the proportion of variation in the dependent variable that can be attributed to the independent variable. In this study, only 56.1% of the total variation is explained, highlighting a high degree of influence.

Table 19:

ANOVA[a]						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	101.342	5	20.268	9.442	.000[b]
	Residual	79.426	37	2.147		
	Total	180.767	42			
a. Dependent Variable: Scholarship						
b. Predictors: (Constant), Networks, Professional Interaction, Communication, Loyalty, Alumni Association						

The above table presents the ANOVA results, which assess the overall significance of the regression model and its ability to fit the data effectively. The findings indicate that the regression model is statistically significant, demonstrating strong predictive capability for the dependent variable (p < 0.000). Since this p-value is below the 0.05 threshold, it confirms that the regression model meaningfully predicts the dependent variable

Table 20

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	1.090	1.463		.745	.461
	Communication	.297	.076	.621	3.905	.000
	Loyalty	-.342	.134	-.528	-2.542	.015
	Professional Interaction	.351	.091	.651	3.852	.000
	Alumni Association	-.093	.091	-.233	-1.025	.312
	Networks	.287	.167	.289	1.719	.094
a. Dependent Variable: Scholarship						

The table above gives the explanation of dependent variable from independent variables as well as determine whether independent variables contribute statistically and significantly to the model.

Y (Dependent Variable) $= \beta$ (Constant)$0 + \beta1(IDV_1) + \beta2 (IDV_2) + \beta3(IDV_3) + \beta4(IDV_4) + \beta5(IDV_5)$

(Scholarship) $= \beta0$(Constant)$ + \beta1$(Communication)$ + \beta2$ (Loyalty) $ + \beta3$(Professional Interaction) $ + \beta4$(Alumni Association) $ + \beta5$(Networks)

Funding $= -1.090$ (Constant)$+ 0.297$(Communication)-0.342(Loyalty)$+0.351$(Professional Interaction)

From the Sig. column, communication, loyalty and professional interaction are the independent variables that significantly contribute to the model. Alumni association and networks do not significantly contribute to the model.

From the above model, -1.090(constant) is the predicted scholarship when there is zero communication, loyalty and professional interaction. In other words, if the alumni do not communicate, are not loyal to their course and do not have professional interaction, the scholarship is expected to be -1.090. The positive coefficients suggests that an input in communication and professional interaction is associated with an increase in scholarship while the negative coefficient suggest that an input in loyalty is associated with a decrease in funding. This implies that a single unit increase in communication and professional interaction will increase scholarship by 0.297 and 0.351 and a single unit increase in loyalty will reduce scholarship by 0.342. Therefore, professional interaction is the best predictor for scholarship.
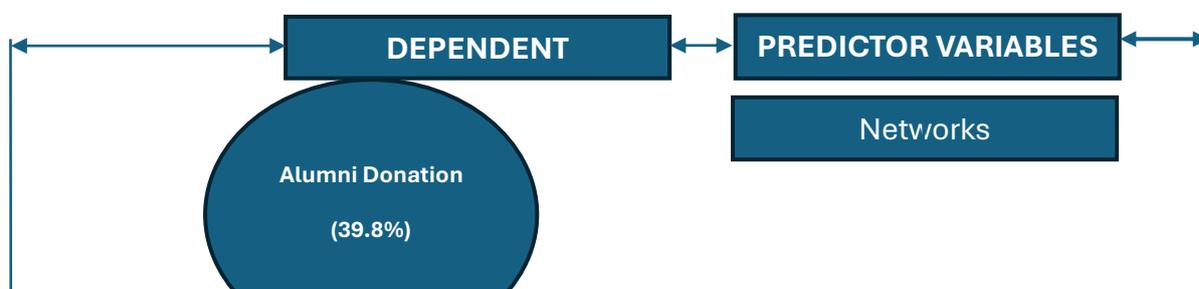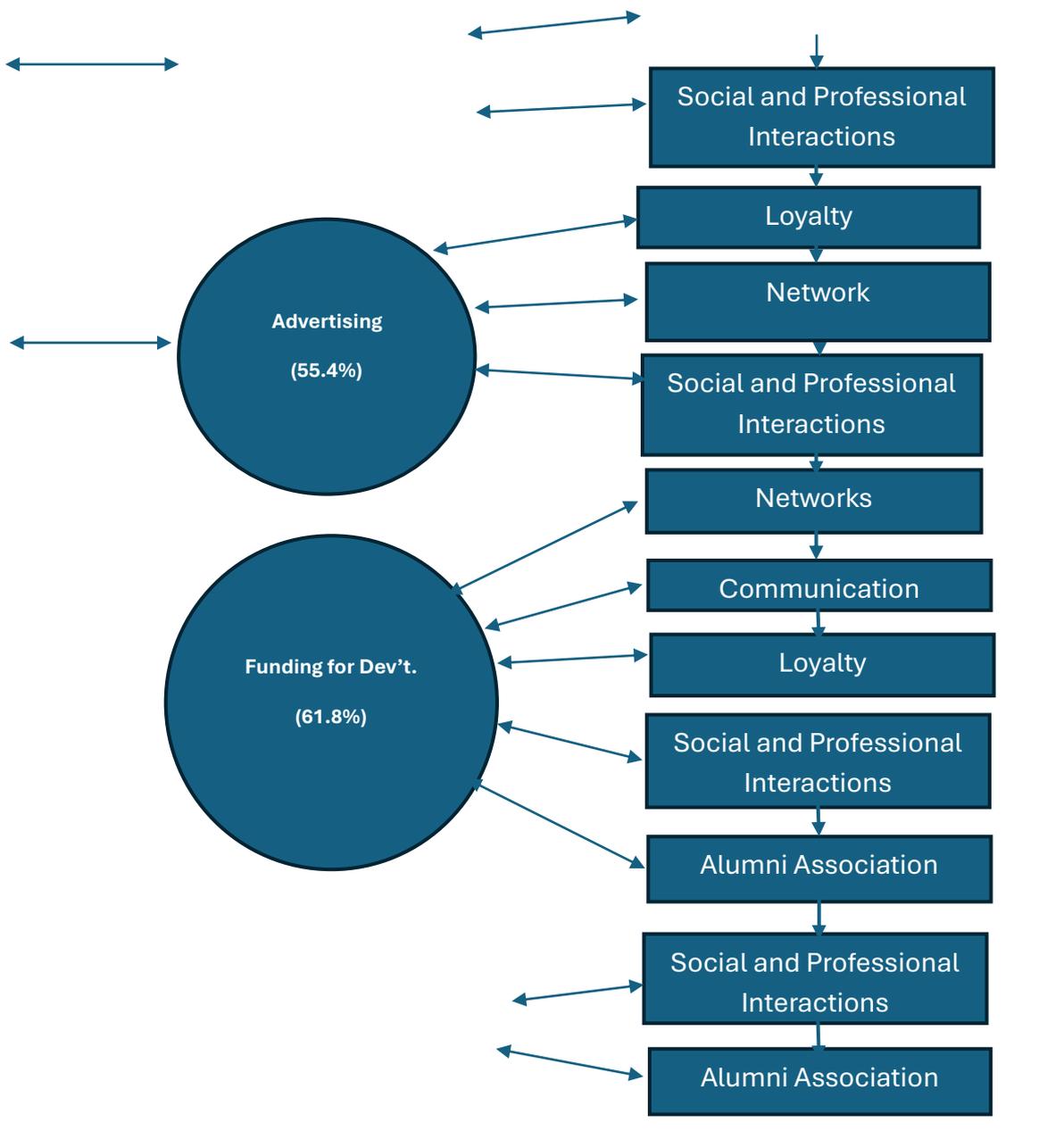
Figure 2: Predictive Model for Alumni Contributions to the Progress of Their Institutions

1. Alumni Donation (39.8%)

This is a major component, showing that direct financial contributions are the most common and significant way alumni support their former institutions. When institutions understand the factors that drive alumni to donate such as feeling appreciated, being updated on institutional progress, or being asked to support specific projects they can tailor their outreach efforts. This predictive model is instrumental in identifying which alumni are most likely to donate and what kind of appeals would work best. This improves efficiency and avoids generic messaging that often goes ignored.

2. Advertising (55.4%)

Publicizing the institution's successes, alumni achievements, and fundraising campaigns is crucial. This

predictive model is instrumental in identifying kinds of stories resonate most with alumni. By targeting messages about impact like a scholarship student's journey or a successful infrastructure project institutions can stir pride and a desire to participate.

3. Funding for Development (61.8%)

This predictive model demonstrates that alumni are also interested in contributing to physical and academic infrastructure, like building libraries, laboratories or new academic programs. Institutions can use the model to identify alumni working in industries or professions that align with these development projects. For example, an alumnus in engineering might be interested in funding a new innovation lab. Targeted communication based on this prediction will likely increase engagement and funding success.

4. Scholarship Support (43.2%)

Scholarship support (43.2%) on the predictive model indicate that alumni are motivated to give to give back by supporting current students through scholarships. By analyzing which alumni are more inclined to help students perhaps those who received scholarships themselves the model can match these alumni with specific scholarship funds or student profiles. This would build a cycle of giving that makes alumni feel directly connected to the next generation and gives institutions a compelling story to share.

5. Networks (34.9%, 49.0%, 3.4%)

Alumni networking both socially and professionally is a powerful yet underutilized asset. The predictive model reveals that many alumni value opportunities to build professional networks with their alma mater. Institutions can organize networking events, mentorship programs, and alumni-student mixers to foster this. When alumni see personal or professional gain from staying involved, they are more likely to give back in return. The model can predict which alumni are likely to participate and what format will appeal to them most.

6. Social and Professional Interactions (ranging from 1.3% to 35.5%)

Though the percentages vary, these interactions are crucial. Casual catch-ups, career talks, or alumni spotlight events create emotional bonds with the institution. Establishing which alumni would enjoy or benefit from such interactions helps schools plan engaging events that deepen loyalty. This social capital can later be converted into financial or strategic contributions.

7. Loyalty (1.7%, 50.7%)

This predictive model shows that loyalty is shown as a key driver. Loyal alumni are more likely to give time,

resources, and advocacy. The model can assess loyalty levels by tracking past interactions, attendance at events, or social media engagement. Institutions can then focus on nurturing this loyalty by recognizing and rewarding dedicated alumni, which further motivates them to contribute.

8. Communication (8.8%)

This predictive model postulates that clear, consistent, and personalized communication is essential. The model can help institutions understand which channels (email, social media, calls, events) work best for different groups of alumni. Effective communication increases transparency, trust, and ultimately, engagement. The better an alumnus feels informed and involved, the more likely they are to contribute meaningfully.

9. Alumni Associations (1%, 7.5%)

This predictive model posits that even though the percentage seems low, organized alumni associations provide a platform for structured engagement. The model can guide how to strengthen these associations and increase their influence. Active chapters can take the lead in mobilizing donations, hosting events, or mentoring students.

This predictive model transforms alumni relations from guesswork into a strategic, data-driven process. By understanding who is likely to engage, why, and how best to reach them, institutions can create meaningful experiences that build long-term partnerships. It allows schools to focus on quality over quantity targeting the right alumni with the right message at the right time. When applied effectively, the model increases donations, mentorship, career networking, and emotional connection, all of which are vital to institutional growth.

Moreover, the predictive model is not limited to one institution. It is flexible and can be adapted by universities and colleges worldwide, regardless of size. By collecting similar data, analyzing patterns, and adjusting for local contexts, any institution can use this model to enhance alumni contributions. In a time when public funding is dwindling and competition is rising, this model offers a sustainable path for growth, rooted in the strength of alumni who already believe in the institution's mission.

5.Conclusion and Recommendations

5.1 Conclusion

The study concludes that specific alumni interaction factors are strong predictors of alumni contributions. Networks and social-professional interaction best predicted alumni donations, while loyalty emerged as the most powerful predictor of advertising support. In terms of funding and scholarship contributions, loyalty, networks,

and alumni association involvement played key roles. These predictive models demonstrate that cultivating alumni networks, loyalty, and meaningful engagement opportunities is essential for universities seeking to enhance alumni-driven development and sustainability.

5.2 Recommendations

a) Prioritize building strong alumni networks (regional chapters, profession-based groups) as these are powerful predictors of donations and involvement.
b) Foster alumni loyalty through continuous appreciation and involvement, such as inviting alumni to governance committees, planning boards, or institutional celebrations.
c) Promote professional interaction opportunities such as research collaborations, conferences, and academic forums that keep alumni intellectually and emotionally invested.

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