

Factors Contributing to Missionary Longevity

A Preliminary Survival Analysis of Studio Internship Alumni

By

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ABSTRACT

This paper presents the results of a study of the linkage between host language acquisition and missionary longevity. Data for the study was provided by Studio Internship¹ alumni. Sixty-three alumni who served, or continue to serve, internationally in comparatively difficult contexts returned surveys. At the time of the study, twelve alumni had returned from the field and 51 remained in service on the field.

Parametric survival models, including log-normal, log-logistic, and Weibull specifications, were used to assess the probability that missionaries would remain on the field for at least five years.

The predictive variable of primary interest in this study was host-language proficiency at the end of the missionary's second year on the field (as measured by the proxy variable GPA Level, which measures hours of formal language study). Additional predictive variables included age, marital status, the number of children in the household, prior language learning experience, whether trade or heart language was studied, and several measures of host-country conditions including: the United Nations Human Development Index, the Freedom House social freedom index, the Pew religious restrictions index, the World Bank political stability index, the Fragile States economic fragility index, and the InterNations Ease of Settling In ranking.

Amongst these predictive variables, the most consistent predictive element was the amount of formal language study time missionaries had invested by the end of their second year on the field. This variable was positively associated with longevity and statistically significant through numerous model specifications.

The preferred parsimonious log-normal model contained GPA level and the Pew religious-restriction measure. Each one-point increase in GPA level was associated with approximately an 87% increase in predicted tenure. The rate of increase was greatest at low GPA levels and leveled off as language study time increased. Holding religious restrictions constant at the sample mean, the predicted probability of completing at least five years of service rose from 56.7% for those who only reach GPA level 2 to 95.9% for those who reach GPA level 5.

¹ Studio Internship is a missionary training and Muslim outreach ministry based in California, USA. Their alumni presently serve among 44 Muslim majority language groups in 35 nations. Ninety-seven percent of Studio alumni move overseas for long-term missionary service, and of these over 80 percent complete five or more years of service. <https://Studiolnternship.org>

By contrast, age, marital status, number of children, and prior language learning experience showed little independent predictive value. Living conditions (as measured by the proxy Human Development Index) generally had the expected positive coefficient, and the difficulty-of-cultural-adjustment ranking (as measured by the proxy Settling-In Index) generally had a negative coefficient, as hypothesized, but these contextual effects were not consistently statistically significant across model specifications.

The most unexpected result was the positive association between religious restriction and longevity. Employees serving in countries characterized by greater religious restrictions tended to remain longer, even after controlling for language proficiency and living conditions; the relationship was statistically significant at a 10% level in most model specifications. Principal-component analyses further reinforced the existence of a distinct religious-restriction dimension in retention.

A plausible explanation for this unexpected finding is selection and preparation. Missionaries and their sending organizations may selectively match unusually committed, resilient, or prepared individuals to more restrictive assignments.

These findings give very strong statistical support to prior studies that have highlighted the importance of language learning for missionary retention. Missionaries who achieve GPA level 5 by the end of their second year on the field are nearly twice as likely to complete five years on the field as those who reach only GPA level 2, and three times as likely as those who never progress beyond phase 1.

The management implication of this finding is clear: to increase missionary retention, sending organizations and their field leadership should give considerable attention to host-country language study during a missionary's first two years abroad. The study also implies that missionary retention does not depend on the missionary's age, marital status, number of children in the household, prior language-learning experience, or host-country conditions (the location's economic development or religious freedom), but on developing the linguistic abilities that allow missionaries to bond with local people and function effectively in their new host culture.

Introduction

Unplanned early attrition has long been one of the most pressing concerns of Christian missions leaders. On the field, unplanned early attrition disrupts team and ministry initiatives and can be spiritually and emotionally devastating to the missionaries themselves. And at home, attrition imposes substantial costs on the sending churches

and agencies who invest heavily in recruiting, training, deploying, and supporting missionaries.

The groundbreaking 1997 ReMAP I² study sought to identify causes of missionary attrition using a retrospective attritional-analysis approach. The researchers examined 528 surveys from missionaries who left the field between 1994 and 1996 and distinguished between preventable causes of departure (team, marriage, and family concerns; organizational mishaps) and unpreventable causes (retirement, death, health issues, and political circumstances). They then ranked the perceived causes of attrition.

The researchers identified several preventable factors that contributed most strongly to attrition including personal struggles, marriage and family difficulties, agency and organizational disagreements, work-related issues, and team relational problems. External dangers were not found to be a major contributor.

Several factors were also identified that appeared to protect against early attrition including a strong, clear sense of calling, having a supportive family, maintaining a vibrant relationship with God, cultural adaptation, strong team and organizational relationships, and on-field pastoral care.

Ten years later, the ReMAP II³ research team extended these findings by comparing the organizational practices of high-retention and low-retention mission agencies. Using retention and loss data from 598 participating organizations from 22 countries, the researchers identified seven organizational best practices that help missionaries stay longer and remain effective.

The authors conclude that organizations seeking to help their missionaries remain effective for the long run should: 1) use psychological and emotional assessments to screen candidates before deployment, 2) provide quality pre-field training, especially language learning, 3) help families and teams maintain healthy relationships, 4) maintain strong, supportive communication with missionaries on the field, 5) provide on-field pastoral care and support, 6) encourage missionaries to maintain a strong and vital relationship with God, and 7) take host-country conditions into account in placements.

² The ReMAP I findings are reported in the book *Too Valuable To Lose - Exploring the Causes and Cures of Missionary Attrition*, 1997, edited by William D. Taylor.

³ The ReMAP II findings are reported in the book *Worth Keeping – Global Perspectives on Best Practices in Missionary Retention*, 2007, by Rob Hay (Editor), Valerie Lim (Editor), Detlef Bloecher (Editor), Sarah Hay (Editor).

Other researchers have approached the retention issue from an entirely different angle. In the Resilient Missionary Study,^{4,5} the authors solicited survey data from 892 global workers serving in 148 countries to calculate their CD-RISC resiliency scores.

The authors find that missionary resiliency is facilitated by 1) a deep connection with God, 2) supportive relationships, 3) healthy mentoring relationships, 4) healthy conflict management, 5) emotional maturity, 6) adaptive coping skills, and 7) supportive teams and communities. They conclude that resilience is fundamentally relational, spiritual, and developmental; and most missionary attrition is preventable if missionaries are coached and mentored to remain resilient.

While each of these studies has made outstanding contributions to missionary effectiveness and retention, their findings are based on relatively simple descriptive and comparative methodologies. Retention outcomes are influenced by a complex interaction of personal characteristics and organizational practices. A more robust approach would use an analytical approach capable of examining multiple variables simultaneously in order to assess each factor's relative contribution to retention.

This study seeks to fill this gap. Rather than relying on perceptions, comparisons and rankings, the researchers use a variety of multivariate statistical survival models to evaluate a broad range of personal and contextual variables while controlling for potential confounding influences.

The findings lend statistical support to many of the findings expressed by other researchers but challenge other commonly held assumptions. In particular, the results demonstrate the importance of successful early language acquisition, the influence of host-country conditions, the significance of missionary selection, and the importance of quality pre-field internship. The results suggest that strategic investments in language learning, informed placement decisions, candidate assessment and screening, and quality pre-field training will yield large improvements in retention.

By providing statistically grounded evidence of the determinants of missionary retention, this study contributes to a growing desire for increased analytical rigor in missional studies. And, more broadly, it points the way for other researchers to use this methodology to assess how individual preparedness and contextual realities interact to shape longevity.

⁴ Supporting Today's Global Missionaries Toward Missional Resilience" — Geoff Whiteman and Kristina Whiteman. *Evangelical Missions Quarterly*, Vol. 58, No. 2, April–June 2022, pp. 27–29. Copyright © 2022 by Missio Nexus.

⁵ "How Do Missionaries Become Resilient: Preliminary Findings from the Resilient Missionary Study," in *Relentless Love: Living Out Integral Mission to Combat Poverty, Injustice, and Conflict*, ed. Graham Joseph Hill (Carlisle, UK: Micah Global, 2020), 65–76. Available at: <https://resilient-global-missionary.kit.com/>

The findings have important implications for missionary recruitment, training, oversight, and support.

DATA AND METHODS

The present research was undertaken to identify factors associated with missionary longevity while serving abroad in Muslim contexts, in order to determine the probability that a missionary would remain on the field for five years or more.

The data used in this study were contributed by Studio Internship. Sixty-three Studio alumni returned surveys. At the time of this study, 51 were still serving overseas, and 12 had returned home. All alumni served in difficult majority-Muslim contexts.

Because missionaries still serving on the field have not yet experienced the event of interest, departure, it was determined that the data would be best modeled as a censored-duration analysis problem, rather than an ordinary continuous-outcome regression problem. A statistical survival model of employee retention was therefore used.

The use of survival analysis is important because a currently serving employee with four years of tenure cannot appropriately be treated as though the employee's completed tenure equals four years. That individual's eventual tenure is unknown. Survival methods retain the information that the employee has survived at least four years while recognizing that the eventual departure time is censored.

Candidate Variables

Variable	Concept represented	Initial hypothesis
Age	Age upon entering missionary service	Possibly negative
Married	Married versus single	Possibly positive
# Children	Number of accompanying children	Possibly negative
Languages	Number of languages studied	Positive
Language	Heart language vs. trade language mastery.	Possibly positive

Variable	Concept represented	Initial hypothesis
GPA ⁶ Level	Language fluency attained by the end of the second year abroad, as measured by GPA level	Positive
HDI	Human development index by UNDP	Positive
S-Freedom	Social freedom index by Freedom House	Positive
R-Restriction	Religious restriction index by Pew Research Center	Negative
Stability	Political Stability Index by the World Bank	Positive
Fragility	State fragility index by Fund for Peace	Negative
Settling	Difficulty of settling index by InterNations	Negative

The dependent variable in the model was Years, representing length of international service. The variable Continue identified whether the employee remained in international service at the time of observation.

- Continue = No was coded as an observed departure or failure.
- Continue = Yes was treated as a right-censored observation.

Additional predictive variables used in this study cluster in three categories:

- First, **individual and family characteristics**, including age at the beginning of missionary service, marital status, number of accompanying children, and number of languages previously studied.
- Second, **language learning**, specifically the missionary's host-language fluency as estimated by GPA⁷ level at the end of their second year abroad; and whether the

⁶ GPA, or the Growing Participator Approach, is a robust languaculture learning methodology primarily used by the participants in this study. It categorizes language learning investment in 6 levels, or phases, as measured by time investment: Phase 1 (100 hours), Phase 2 (150 hours), Phase 3 (250 hours), Phase 4 (500 hours), Phase 5 (500 hours), and Phase 6 (ongoing self-study). www.growingparticipation.com

⁷ The missionary's GPA language level was used as a proxy variable to estimate language proficiency. GPA levels measure the number of hours of formal language study, not the results of a specific language fluency assessment. The GPA measure of time invested in language study was judged to be the preferred actionable variable for this study as 1) it is easily tracked and calculated at low cost without potential assessment error, and 2) field leadership can easily monitor and often control missionaries' hours of language study.

missionary had studied the heart language of the people group or a broader trade language.

- Third, **host-country socio-political and economic indicators**, including the host country's economic development, social freedom, religious restrictions, political stability, economic and political fragility, and ease of settling in.⁸

The theoretical expectations were generally straightforward. Higher language proficiency, greater human development, greater social freedom, and higher political stability were expected to predict longer tenure. Higher religious restriction, fragility, and difficulty settling in were expected to predict shorter tenure.

Candidate Models

Several model specifications were examined including Weibull, log-logistic, and log-normal. The rate of missionary departure is typically greatest in the early settling-in years and slows as missionaries adapt to their new context. Because departure risk is unlikely to be constant through the missionary's tenure, the original model expectation was log-logistic. Empirically, however, the log-normal specification frequently produced the best fit among the more parsimonious models. Both log-normal and log-logistic distributions allow non-monotonic hazard structures, so selecting log-normal does not force constant or monotonically increasing departure risk. Consequently, in the later model-selection phase log-normal models were treated as preferred and log-logistic and Weibull models were used for robustness checks.

Initial models employing all country-level socio-political indicators suffered from substantial multicollinearity resulting in few statistically significant variables. Principal components analysis helped identify noncontributing variables. For example, high stability and low fragility normally occur together. Relatively little predictive information was lost by eliminating one variable over the other.

⁸ Economic development was estimated with the proxy Human Development Index (HDI) by UNDP (<https://hdr.undp.org>); Social Freedom was estimated with the proxy Freedom in the World Score by Freedom House (<https://freedomhouse.org>); Religious Restrictions were estimated with the proxy Restrictions on Religious Freedom Index (GRI) by Pew Research Center (<https://pewresearch.org>); Political Stability was estimated with the proxy Worldwide Governance Indicators Index (WGI) by World Bank (<https://databank.worldbank.org>); Fragility was estimated with the proxy Fragile States Index (FSI) by Fund for Peace (<https://fragilestatesindex.org>); Ease of Settling In was estimated with the Ease of Settling In Index by InterNations (<https://www.internations.org>).

The analysis therefore shifted toward parsimonious models, generally using GPA Level in year 2 plus one or two country-level variables at a time. This approach was justified by the limited number of failures. With only 12 departures, models containing seven or more predictors risked estimating more parameters than the event information could support reliably.

AI Disclosure

The author used ChatGPT (GPT-6, OpenAI) to assist with this study in several ways. First, it was used to screen background literature for potential applicability to this study. All studies referenced in this paper were manually reviewed for content and suitability by the author. Second, it was used to perform the survival-model statistical regressions. All model functional-form choices and predictive-variable selections were made by the author, and all final-form regression results were manually checked and verified by the author. Third, ChatGPT was used to format the list of references, produce some of the tables, and lightly edit the final manuscript.

EMPIRICAL RESULTS

A log-normal accelerated-failure-time model was ultimately deemed to be preferred and was estimated using 2-Year GPA and the Religious Restrictions Index (RR) as predictors. The following tables present the results of the regression:

$$\log(T) = -1.7589 + 0.6121(\text{GPA}) + 0.03594(\text{RR}) + e$$

Statistical Results:

Predictor	Coefficient	SE	z	p-value	Time ratio
Intercept	-1.7589	1.4912	-1.180	.2382	-
2-Year GPA	0.6121	0.1958	3.127	.0018	1.844
RR	0.03594	0.01943	1.850	.0644	1.0366
log(sigma)	0.1540	0.2204	0.699	.4846	-

Overall Model Fit

N	Departures	Censored	Log likelihood	AIC	BIC
63	12	51	-42.838	93.676	102.248

The Likelihood-ratio test of significance yielded a chi-square value of 13.116 corresponding to a p value of 0.0014. The model is thus highly statistically significant.

Predicted Probability of Serving 5 or More Years

The average model-predicted probability of remaining on the field for at least five years was 80.6%. To assess the quantitative importance of language study, the probability of completing five or more years of service was calculated assuming various 2-year GPA scores. The religious restrictions variable was held constant at the sample mean of 65.1 for these calculations.

2-Year GPA	RR held at	Predicted P(Years >= 5)
2	65.1	56.7%
3	65.1	75.6%
4	65.1	88.8%
5	65.1	95.9%

The Central Finding: Early Language Attainment

The most consistent finding across all model specifications was the statistically significant positive relationship between Second Year GPA Level and missionary longevity. Across all models, 2-Year GPA was the strongest predictor. In the preferred model, with religious restrictions held constant at the sample mean, the predicted probability of completing at least five years of service rises from 56.7% at GPA = 2 to 95.9% at GPA = 5. The rate of increase is nonlinear, accelerating more quickly at low GPA levels and gradually leveling off as the GPA score reaches six.

These findings lend very strong numerical support to the conclusion of the ReMAP I and ReMAP II studies which regarded language attainment as one of the most important indicators of missionary tenure. William Taylor in the book *Too Valuable to Lose* (ReMAP I) makes the case that language fluency improves both missionaries' experience and their effectiveness:

“Work satisfaction and ministry are enhanced through a knowledge of the local language.”⁹

“Without language competence, many missionaries struggle with staying on the field.”¹⁰

He also argues that first-term missionaries need sufficient time at the beginning of their careers to learn the host language well.

“We would not think of sending missionaries without adequate biblical training. Nor would we send them out without language preparation.”¹¹

Hay et al., in the book *Worth Keeping (ReMAP II)*, echo these opinions. The authors report that adaptability to different cultures and success at learning the host language are two primary indicators of a missionary’s field tenure and ultimate success.

The reasoning behind these statements is intuitive. Missionaries who acquire meaningful host-language competence can form relationships beyond the expatriate community. These relationships provide friendship, belonging, practical assistance, cultural interpretation, and access to informal local knowledge. Missionaries who cannot communicate independently are much more likely to experience routine tasks as sources of stress.

In contrast, increased fluency expands autonomy, reduces reliance on others, and grants the missionary increased freedom and confidence in social interactions. Qualitative work by Zhang and Peltokorpi¹² and by Selmer and Luring¹³ also supports these conclusions. The authors find that host-language¹⁴ proficiency contributes to successful long-term overseas service because it facilitates deeper relationships and integration into the host environment.

What the present study contributes to these prior studies is a statistically significant quantitative estimate of the strength of the link between host language proficiency and missionary longevity.

⁹ *Too Valuable to Lose*, p. 58.

¹⁰ *Too Valuable to Lose*, p 284.

¹¹ *Too Valuable to Lose*, p 176.

¹² ‘Multifaceted Effects of Host Country Language Proficiency in Expatriate Cross Cultural Adjustments: A Qualitative Study in China’, *International Journal of Human Resource Management*, November 2016.

¹³ ‘Host country language ability and expatriate adjustment: the moderating effect of language difficulty’, *The International Journal of Human Resource Management*, Volume 26, 2015.

¹⁴ As used in this paper ‘host language’ refers to the language the people are commonly speaking, either the heart language or the trade language.

Heart Vs. Trade Language

Several prior researchers have noted the important linkage between not only host country language fluency, but specifically host country *heart language*¹⁵ fluency and missionary effectiveness. In the book *From Seed to Fruit*, edited by Woodberry,¹⁶ the authors distinguish between merely being able to function in a regional or trade language and gaining substantial ability in the host country's "heart" language. Their research suggests that this distinction matters considerably. They find that having at least one team member fluent in the heart language more than doubles the missionary team's chances of planting at least one church.

Working with the same Fruitful Practices Research data set, Eric Adams, Don Allen, and Bob Fish found that missionary teams that 1) ministered in the local language, 2) had at least one highly proficient speaker, and 3) incorporated the people's learning preference (oral/literate) into their ministry strategy, had an estimated 82% probability of having planted at least one church and a 41% probability of having planted multiple churches.¹⁷

Given the well-established correlation between ministry in the heart language and church planting effectiveness among Muslims, the authors determined to investigate whether a similar link exists between heart language fluency (as opposed to trade language fluency) and field retention. The a-priori hypothesis was that a similar relationship would be found when investigating longevity. Surprisingly, no such relationship was found.

Parametric models of missionary retention were formulated using both heart language GPA level at the end of the second year and trade language GPA level at the end of the second year. When formulated in this way, the coefficient on both 2-Year Heart GPA and 2-Year Trade GPA were of the correct sign and statistically significant – 2-Year Heart GPA at a 5% level and 2-Year Trade GPA at a 10% level.

The results are presented in the table below. The split-GPA model is statistically significant overall, but the simpler composite 2-Year GPA + RR model provides a better fit overall as indicated by the AIC statistic. The coefficients on 2-year heart GPA and 2-year Trade GPA are quite close, 0.3149 and 0.2697 respectively. Given the size of the standard errors on these variables, it is not possible to statistically differentiate their influence on missionary

¹⁵ 'Heart language' typically refers to the primary language spoken in the homes of the engaged people group. This is frequently distinct from broader regional trade languages, which might be used in business across multiple people groups. Heart language is very often the language used to communicate deep emotion.

¹⁶ *From Seed to Fruit (Revised and Enlarged Second Edition): Global Trends, Fruitful Practices, and Emerging Issues Among Muslims*, Edited by Dudley Woodberry, William Carey Library, January 1, 2011.

¹⁷ Eric Adams, Don Allen, and Bob Fish. (2009). Seven Themes of Fruitfulness. *International Journal of Frontier Missiology* 26, no. 2 (2009): 75–81.

retention. We cannot prove that learning the heart language has a measurably stronger influence on missionary retention than learning the trade language.

Predictor	Coefficient	Std. Error	z	p-value	Time Ratio	95% CI Time Ratio
Intercept	-1.7171	1.7000	-1.010	.3125	-	-
2-Year Heart GPA	0.3149	0.1465	2.149	.0316	1.370	1.028-1.826
2-Year Trade GPA	0.2697	0.1523	1.771	.0766	1.310	0.972-1.765
RR	0.04713	0.02280	2.067	.0387	1.048	1.002-1.096
log(sigma)	0.2451	0.2228	1.100	.2712	-	-

This finding is moderately surprising but easily understood. Missionary longevity is believed to be enhanced by emotionally nurturing local friendships, a sense of belonging, practical assistance, cultural understanding, and access to informal local knowledge. It is possible that missionaries who choose to master the trade language are just as likely to establish these kinds of relationships in the host culture as missionaries who master the heart language. In almost all contexts there is a sizable local population that functions well in the trade language, be it French in Morocco or Russian in Kyrgyzstan. Missionaries who master the trade language will undoubtedly build relationships with locals who also speak the trade language. The results of this study suggest that the emotional and cultural support afforded by these local trade language relationships is just as meaningful as relationships built through mastery of the heart language.

Cultural proximity may also play a role. The cultural distance between missionaries and educated locals who speak the trade language may be smaller than the cultural distance between missionaries and locals who only speak the heart language. If this is so, then in many contexts it may actually be easier for missionaries to build supportive, nurturing relationships, and minister longer, if they learn the trade language. This finding does not mean that both languages will be equally fruitful however, as reported by Adams et al.

One clear implication of these findings is that mission agencies should place a very high priority on language learning during the missionary's early years on the field. Very often missionaries are hurried to the field because they bring valuable skills to support a humanitarian project. And in these cases, the new missionary may only get a few months, if that, to obtain survival language ability. This research makes it clear that this practice is

short-sighted. Missionaries who only reach survival language ability are much more likely to depart early. Field leaders who establish norms and protocols for new missionaries in their region should watch carefully to be sure that new missionaries' long-term productivity isn't hijacked by the tyranny of immediate needs.

Relatedly, mission agencies should also provide quality training for new missionaries — especially training in how to learn a language. Far too often missionaries are sent to the field without clear knowledge of how to learn a new language or navigate within a new culture.

Prior Language Learning Experience

The number of languages previously studied did not provide the same predictive value as actual hours invested in language study. This distinction has substantial practical importance. A missionary who has studied several languages may possess useful metalinguistic skills, but that does not guarantee meaningful integration into the present host culture. One implication of this finding is that mission organizations should resist the temptation to use prior international experience or language study as a substitute for monitoring hours invested in studying the current language.

Male vs. Female

In the data sample, 41 respondents were female and 22 were male. Among the female respondents, 11 (or 26.8%) had returned, and among the male respondents, 1 (or 4.6%) had returned.

Gender	Employees	Departures	Continuing	KM P(>=5 years)
Female	41	11	30	77.8%
Male	22	1	21	94.7%

In the statistical model, gender is coded as a binary variable (Male/Female) with female = 0. Including gender in the model produced the following results:

$$\log(T) = -1.6101 + 0.6271(\text{GPA}) + 0.02776(\text{RR}) + 1.1732(\text{Male}) + e$$

Predictor	Coefficient	SE	z	p	Time ratio	95% CI
Intercept	-1.6101	1.4192	-1.134	.2566	-	-
2-Year GPA	0.6271	0.1915	3.275	.0011	1.872	1.286-2.725
RR	0.02776	0.01825	1.521	.1283	1.028	0.992-1.066
Male vs. Female	1.1732	0.6382	1.838	.0660	3.232	0.925-11.292
log(sigma)	0.0848	0.2200	0.386	.6998	-	-

The gender variable is nearly statistically significant at a 5% level implying that gender may play an important role in missionary retention, at least in the contexts where Studio alumni serve. Holding 2-Year GPA and religious restrictions constant at their sample means (GPA = 3.68; RR = 65.13), the fitted model estimates the probability that female missionaries will complete 5 or more years on the field to be 79.5 percent and the probability that male missionaries will complete five or more years to be 97.1 percent. The coefficients and statistical significance of the other variables remain substantially the same, continuing to tell the same story.

These findings need to be interpreted cautiously as there was only one observed departure event among 22 male missionaries. This resulted in a very wide confidence interval for the gender variable. Accordingly, all that can be said supportably is that, in this data set, gender appears to be an important indicator of longevity, but the precise magnitude of the association is uncertain and requires confirmation in a larger sample.

Marriage, Family, and Age

Various researchers have suggested that difficulties experienced by spouses and family members may contribute negatively to expatriate longevity,¹⁸ while other authors speculate that marriage and family may provide a settling influence that contributes positively to

¹⁸ Sterle, M.F., et al. 'Expatriate Family Adjustment: An Overview of Empirical Evidence on Challenges and Resources'. *Frontiers in Psychology*, 9, Article 1207. National Institute of Health, National Library of Medicine, 2018. <https://pmc.ncbi.nlm.nih.gov/articles/PMC6064735/>

longevity.¹⁹ To explore this question, the current model includes a married/single binary variable in the study, and the number of children in the home during the first two years on the field.

The authors found that neither of these variables offered any predictive power. There was no discernible difference in the probability of serving for five years or more among singles, married couples, and households with children. This finding remained robust throughout numerous model specifications.

A similar result was found when investigating the effect of the missionary's age. Missionaries were asked their age at the time that they first launched to the field. Answers ranged from 20 to 70. Given the fact that all missionaries must leave the field at some time, it was thought that age would contribute negatively to longevity. However, this was not borne out in this study. Age did not influence the probability that a missionary would serve for five or more years.

Age, marital status, and number of children are easily observable demographic characteristics. Yet they were found to be relatively weak proxies for the kind of personal qualities that matter most in difficult missionary assignments. The ReMAP I study identified tolerance for ambiguity, cultural humility, persistence, emotional stability, cultural curiosity, willingness to learn, sense of calling, motivation, capacity to form relationships with host-country nationals, and willingness to invest heavily in language study as the most important personal characteristics linked to longevity.

One implication from our findings is that agencies should be cautious about selecting and placing missionaries on the basis of marital status and age. International assignments require a distinct set of adaptive competencies that are hard to measure and include in a statistical study.

Host-Country Difficulty

The present study included several indicators designed to capture different dimensions of host-country difficulty including: The UNDP Human Development Index, The World Bank Political Stability and Absence of Violence/Terrorism index, The Fund for Peace Fragile States Index, The Pew Research Center's Government Restrictions Index, The InterNations Ease of Settling In ranking. A priori, one might expect missionaries to stay longer in

¹⁹ Dang, Q.T., Hussain G. Rammal, Snezhina Michailova. 'Expatriates' families: A systematic literature review and research agenda', *Human Resource Management Review*, Volume 32, Issue 4. 2022. <https://www.sciencedirect.com/science/article/abs/pii/S1053482221000565>

countries characterized by strong economic development, political stability, social freedom, and religious tolerance.

Among the variables of host-country difficulty, HDI and Settling-in generally behaved consistently with theoretical expectations. In the most parsimonious models HDI had a positive coefficient, and Settling tended to have a negative coefficient as expected. However, these coefficients usually failed to reach a 5% significance level. The following table presents the results of a typical log-normal GPA + HDI model:

$$\log(T) = -1.61 + 0.262(\text{GPA}) + 0.023(\text{HDI}) + e$$

Predictor	Coefficient	SE	p
2-Year GPA	+0.262	0.133	.049
HDI	+0.023	0.017	.175

In other specifications HDI moved closer to statistical significance, but the general conclusion remained that the direction was plausible while the sample provided insufficient precision for a statistically confident effect. Settling produced a similar pattern: the coefficient was negative as expected, sometimes approaching statistical significance, but weaker than GPA, Religious Restrictions, or HDI.

The lack of statistical significance might reflect the small sample size used in this study, but it more likely reflects measurement limitations in the indices. National indices provide a useful generalization of the environmental context but may not be precise enough to measure the actual hardship experienced by an individual missionary. The implication for mission agencies is that they should be cautious about placing trust in macro-level indicators of host-country hardship. They do not appear to be strong predictors of missionary retention.

Religious Restrictions

Perhaps the greatest puzzle uncovered in this study is the coefficient on religious restrictions. In this study, Pew Research Center's Government Restrictions Index (GRI) was used as a proxy for religious restrictions. The index measures things such as government

limits on worship, preaching, proselytizing, conversion, religious affiliation and registration, as well as government harassment or use of force against religious groups. Pew combines 20 indicators in compiling the score. The a priori expectation for the sign of the coefficient on this variable was negative. That is, greater governmental restriction on religious beliefs and practices is expected to make missionary service more difficult and thus shorten tenure.

Yet, surprisingly, the empirical result was consistently positive. For example, in the preferred log-normal GPA + R-Restrictions model referenced above, the coefficient was +0.0359 and was statistically significant at a 7% level.

Because the finding was consistent across all model specifications and was often statistically significant, it would not be appropriate to dismiss this finding as noise in the data. Neither is it appropriate to conclude that repression *causes* missionaries to remain abroad longer. It's much more probable that the coefficient reflects genuine information, most likely some form of screening or selection mechanism.

There are several levels at which this might take place. Missionary appointments are not randomized experiments. Most mission organizations use emotional and psychological testing to screen prospective missionaries before they are placed on the field. Vulnerable candidates are often steered away from serving in highly restrictive contexts. As a result, missionaries serving in especially restrictive environments may be systematically different from missionaries serving in relatively easy locations.

Self-selection may also contribute to this finding. Missionaries who feel called to especially difficult or restrictive countries may have exceptional drive, commitment, sense of calling, ability to tolerate hardship, and/or willingness to accept personal risk.

And finally, a priori expectations may also play a role. A missionary entering a comparatively easy country may expect the assignment to be easy and become frustrated by ordinary adjustment problems. A missionary entering a highly restrictive country may expect difficulty from the outset and interpret hardships as normal rather than as evidence that they are failing or didn't hear God's call correctly.

One is reminded of the Apostle Paul. When Ananias was told to meet Saul shortly after his encounter with Jesus, he objected for fear of Saul's reputation. But God spoke to him in a vision and said: *"Go, for Saul is my chosen instrument to take my message to the Gentiles and to kings, as well as to the people of Israel. And I will show him how much he must suffer for my name's sake."* (Acts 9:15 NLT). Paul's drive, sense of calling and commitment are undeniable, and it's interesting to see how God also prepared him with clear expectations.

These explanations remain hypotheses - the present dataset cannot distinguish them. But the selection hypothesis is consistent with the norms of good human resource management and missionary retention research emphasizing careful screening and assignment matching.^{20,21}

Context and Retention Probabilities

Across the numerous parametric models examined during the study, the average predicted five-year retention rate for Studio Internship alumni was 80.6%, with small variation depending on the model specification. Individual probabilities varied substantially according to the difficulty of the place of service and personal characteristics.

It is important to note that this finding is specifically for Studio Internship alumni. While the surveys returned for this study were all for “long-term” missionaries, they were not a randomized sample of all missionaries on the field. Studio interns receive robust training in how to learn a language and how to endure the rigors of missionary life. They practice these and other skills daily in a Muslim-rich community before departing for the field. Accordingly, the above-mentioned longevity prediction will likely differ substantially for missionaries who leave for the field without equivalent training, and those who serve in different religious contexts.

The purpose of this study was not to characterize missionaries as a whole, but to demonstrate the survival-modeling technique and identify factors that may increase missionary retention. So, while the data used in this study are specific to Studio alumni, it is hoped that the findings highlight important principles that apply to all missionaries, especially those who work in difficult, restricted-access countries.

ACTIONABLE IMPLICATIONS

The strongest practical implication is straightforward: mission organizations should measure and manage host-language attainment during a new missionary’s first two years abroad. If the goal is long-term missionary retention, time invested in language learning should not be sacrificed to meet near-term “urgent” needs. Because this finding confirms

²⁰ William D. Taylor ed., *Too Valuable to Lose, Exploring the Causes and Cures of Missionary Attrition*, Chapters 13,14,17,18. World Evangelical Fellowship Missions Commission, 1997.

²¹ Paula Caligiuri, Ibraiz Tarique, Rick Jacobs, ‘Selection for International Assignments’, *Human Resource Management Review*, Volume 19, Issue 3, 2009, Pages 251-262.

consistent recommendations from prior researchers, language proficiency should be treated as a leading indicator of retention risk.

Mission agencies might:

- Provide specialized language internship before departure, especially how to learn a language.
- Monitor new missionaries' hours invested in language study. This approach is easier for both the missionary and their sending organization to track, and potentially more reliable than using periodic language assessment tests.
- Protect language study time from competing “urgent” ministry tasks. Field leaders should monitor this and protect new missionaries from contrary church and team expectations.
- Incentivize language learning. For mastering select languages, the US State Department offers employees substantial financial bonuses ranging in 2025 from \$10,000 to \$19,000 depending on the assessment level achieved.²²
- Provide on-field support. This could be the provision of a local language school, periodic visits from language learning coaches, or on-field coaching webinars, for example.
- Provide semi-annual language assessments. The objective is not simply accumulation of instructional hours, but rather functional communicative competence.

LIMITATIONS

While this study makes several contributions to the missionary longevity literature, the findings suffer from several important limitations.

Limited Data: The dataset contained 63 missionaries, a relatively small data sample, and only 12 of these were departures. The small number of departures makes it difficult to prove statistical significance, which may be why several of the variables had the expected sign but were not statistically significant. This limitation is the primary reason why the parsimonious two-variable models were preferable to specifications containing many overlapping country indices.

²² US Federal Register, Executive Order 14368, <https://federalregister.gov/d/2025-23844>.

Studio Specific: The data obtained for this study were not drawn from a random sample of missionaries—it is specific to alumni of the Studio Internship. Accordingly, the findings, and especially the estimated probability of enduring on the field for five years or more (80%), should not be understood as predictive of all missionaries. The estimate reflects missionaries trained by the Studio Internship.²³

American Specific: The data, in addition to being specific to the Studio internship, was also made up almost entirely from American citizens. Of the 63 respondents, 60 were for missionaries born in the USA, three were from East Asian countries.

Not Causation: The analysis put forth in this study is observational and should not be understood to establish causation. This fact is particularly important for religious restrictions. The positive relationship should not be interpreted as an indication that religious restrictions increase retention. It more likely points to a screening and selection mechanism.

Selection. Missionaries are not randomly assigned to countries. Both self-selection and organizational selection can produce strong associations between country characteristics and missionary characteristics. As noted above, this may explain why missionaries appear to remain longer in countries with greater religious restrictions.

Proxy Variables. Several of the explanatory variables used in this study are crude proxies. For example, GPA measures hours of formal language study and is not a complete measure of communicative competence. The various indexes of host country difficulty may not fully or properly measure the effect they hope to and therefore may not be precise enough to reflect the missionaries' local living conditions.

DIRECTIONS FOR FUTURE RESEARCH

Most importantly, future studies should strive to enlarge the sample size, especially more departure events and broader ethnographic representation. Also, several additional variables deserve attention including: the type and scope of pre-field training, the type and scope of supervision, the type and scope of on-field support, the missionary's tolerance for ambiguity, team type and cohesion, the missionary's workload, the type of language study program used, spouse adjustment, marital satisfaction, children's age and adjustment, family health, using assessed language attainment levels (as opposed to GPA level), and quarterly language assessments (as opposed to a simple 2-year GPA score).

²³ Missionaries are sent to Studio for training by several US based mission organizations, particularly Frontiers (<https://frontiersusa.org/>) and Pioneers (<https://pioneers.org/>).

These additional factors, and others, would strengthen this present study, but would also require substantially larger time and financial investments. It is hoped that the present study offers a start and points a direction for further study.

CONTRIBUTIONS OF THE PRESENT STUDY

This research contributes to missionary retention research in several ways. First, the dependent variable is actual duration of international service, rather than self-reported adjustment or intention to remain. Second, the survival model approach incorporated missionaries who are still serving on the field as well as those who have returned. This approach increases the predictive ability of the model and points a direction for further missionary attrition studies. Third, it identifies second-year host-language learning effort as a particularly promising predictor of longevity. Fourth, the research integrates assessment of individual personal characteristics with multiple country-level indicators of hardship. Fifth, the findings reveal an interesting counterintuitive result regarding religious restrictions, which raises questions about employee selection and placement. And, finally, the findings demonstrate that popular measures of host country difficulty are generally unreliable guides for predicting missionary attrition.

CONCLUSIONS

Mission agencies face a persistent challenge of retaining an effective workforce in Muslim overseas environments. A natural assumption is that longevity will be largely determined by the personal characteristics of the employee, and the difficulty of living in the host country.

The present study offers a more nuanced conclusion. Among the variables examined, the most consistent predictor of longevity was the hours the missionary put into host-country language study during their first two years abroad.

Missionaries who had invested more hours in language learning (as indicated by their second-year GPA level) consistently exhibited substantially longer predicted tenure. In the best simple log-normal model, the predicted probability of completing five years of service increased from 56.7% at GPA = 2 to 95.9% at GPA = 5, holding religious restrictions constant. The relationship between GPA level and longevity remained positive and statistically significant across all model specifications.

This finding lends strong quantitative support to the conclusions of the ReMAP I and ReMAP II authors - and is also consistent with the findings of a broad range of secular expatriate-adjustment studies.

In contrast, simple demographic characteristics such as age, marital status, household size, and prior language learning experience contributed little predictive information. This does not imply that these factors are unimportant; prior studies strongly indicate otherwise. It implies that organizations need to dig deeper into actual household conditions rather than relying on simple demographic categories.

The model also indicated a potential finding that gender plays an important role in missionary retention—at least in the Muslim world where Studio interns serve. The data indicate that male missionaries were approximately 21 percent more likely to complete five years on the field than female missionaries. This finding is weakened by the small sample size, especially the small number of departure events among males.

Country-level indicators of hardship were generally unreliable gauges of missionary longevity. The UNDP Human Development Index and the InterNations Ease of Settling-In ranking both generally moved in the theoretically expected directions but lacked consistent statistical significance.

A major anomaly was religious restrictions. Contrary to the initial hypothesis, employees serving in religiously restrictive environments tended to remain longer, and the relationship was weakly statistically significant across all of the strongest models. The most plausible explanation for this is that mission agencies screen, select, and/or prepare workers for especially difficult environments. Additionally, it's possible that there could be a degree of self-selection, with some workers having exceptional motivation or even attraction to serve in extremely difficult environments. The practical implication we take from this is that mission agencies should screen missionaries for those who are capable of thriving in difficult areas and prepare them well.

For mission agencies seeking an early indicator of missionary longevity, hours of host language study deserve particular attention. Hours of language study function not only as a proxy for ethnolinguistic communication skills, but also serve as an indicator of adaptation, cultural bonding, persistence, and motivation.

The larger implication of this study is that missionary longevity is not a simple function of host country hardship or personal demographic characteristics. It emerges from the interaction between the host environment where employees serve, and the capabilities they develop through language and culture study to live effectively within that environment.

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