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هل يؤثر استخدام منتجات التمويل الأصغر الإسلامي في الدخل والتعليم
والصحة في موريتانيا؟

DOES USAGE OF ISLAMIC MICROFINANCE PRODUCTS
INFLUENCE THE INCOME, EDUCATION, AND HEALTH
IN MAURITANIA?¹

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الملخص

تحاول هذه الورقة تحديد تأثير استخدام منتجات التمويل الأصغر الإسلامي على دخل الموريتانيين وتعليمهم ورعايتهم الصحية، فضلاً عن الثبات بين الجنسين في النموذج. تستخدم المقالة بيانات أولية تم جمعها من خلال استبيان من عينة تتكون من 381 مستفيداً من أكبر مؤسسة للتمويل الإسلامي الأصغر في موريتانيا وهي PROCAPEC نواكشوط . باستخدام طريقة نمذجة المعادلة الهيكلية (SEM) . وجدت النتائج أن استخدام منتجات التمويل المالي الأصغر له تأثير كبير على مستوى الدخل؛ ومع ذلك، فإنه لم يؤثر بشكل كبير على تعليم الأطفال والرعاية الصحية والجنس ليس له تأثير وسيط على العلاقات في النموذج.

Abstract

This paper attempts to determine the effect of the use of Islamic microfinance (IsMF) products on Mauritians' income, education, and healthcare, as well as the gender invariance in the model. The article uses cross-sectional design data gathered through a questionnaire from a sample of 381 beneficiaries of the largest IsMF institution in Mauritania, PROCAPEC-Nouakchott. Using the Structural Equation Modeling (SEM) method, the results found that the use of IsMF products has a significant impact on the income level; however, it did not significantly impact children's education and healthcare. Gender has no moderator effect on the relationships in the model.

الكلمات المفتاحية: موريتانيا ، الشمول المالي ، التمويل الأصغر الإسلامي ، التخفيف من حدة الفقر ، نمذجة المعادلة الهيكلية

Keywords: Mauritania, Financial Inclusion, Islamic Microfinance, Poverty Alleviation, Structural Equation Modeling.

1.0 Introduction

The relationship between finance and economic growth has been studied by numerous research (Beck, Demirgüç-Kunt, & Levine, 2004). Therefore, financial development leads to economic development and vice-versa. Poverty is when people live under less than 1.9 \$ per day (World Bank, 2018). It can also be defined by the lack of necessities such as nutrition, education, shelter, water, electricity, etc. (Farooq, 2008). Poverty can be defined as a lack of primary sources such as income, education, nutrition, health care (Wajdi Dusuki, 2008). Hence, poverty has different dimensions, and this current study focuses on three of them to investigate the impact of Islamic microfinance products usage on them. These dimensions are income level, the education of children, and healthcare.

Poverty in Mauritania is increasing enormously. Around 32 percent of the population live under poverty, and 16 percent are in severe poverty (Amendola, Boccia, Mele, & Sensini, 2016). Besides that, financial inclusion in Mauritania is very low, and the people who have a formal account are only around 20 percent of the population (World Bank, 2015). Therefore, it is crucial to investigate the role of Islamic microfinance to lessen the burdens of Mauritians. According to Stiftung (2018), Mauritania is considered among the group of poorest African countries. Poverty in Mauritania can be seen in the citizens' socio-economic factors with a high rate of illiteracy, unemployment, and unhealthy life. The health coverage in Mauritanian is limited to about only 10 percent of the whole population. Also, the health index is just 68.8 percent in 2018 (UNDP, 2018).

Microfinance can be defined as the provision of micro-credit, micro-saving, micro-takaful, micro-remittances (Boateng & Agyei, 2013). Microfinance can reduce financial exclusion, leading to the development of the financial system and poverty alleviation (Lal, 2018). Islamic microfinance leads to financial inclusion and poverty alleviation (Mohieldin, Iqbal, Rostom, & Fu, 2011). However, access only does not mean the usage of financial products offered. Without the effective usage of microfinance services, poverty will not be reduced (Shankar, 2013).

This study is among the pioneer in the field of Islamic microfinance in the context of Mauritania. Indeed, research is scarce in Mauritania. This research is also a value-added to the international literature to enrich Islamic microfinance and health care discussions. It brings new pieces of evidence to fill up the literature gap on the role of Islamic microfinance in poverty. Since there is no consensus on the effectiveness of microfinance on poverty, this research will contribute to the worldwide controversy. The main purpose of this paper is to examine the role of using Islamic microfinance products on the income, children's education, and healthcare of the beneficiaries of the most prominent Islamic microfinance institution in Mauritania, which PROCAPEC. This institution is the first Islamic microfinance in the country. This study also investigates the moderator role of gender in the relationship between the usage of IsMF products and poverty dimensions. Thus, the following research questions are elaborated:

- **RQ1.** Does usage of Islamic microfinance products impact the income level in Nouakchott-Mauritania?
- **RQ2.** Does usage of Islamic microfinance products impact the children's education in Nouakchott-Mauritania?
- **RQ3.** Does usage of Islamic microfinance products impact health in Nouakchott-Mauritania?
- **RQ4.** Does gender moderate the relationships between usage of Islamic microfinance products, income level, children education, and healthcare in Nouakchott-Mauritania?

The paper is organized as follows: the first section is about the introduction, which included the problem, gap, and objective. The second section is presenting the theory and different studies that support this research. The following session is discussing the methodology used. Then, the results and analysis are presented in the next session. Finally, the last section is the conclusions and recommendations.

2.0 Literature Review

2.1 Theories of the Study

2.1.1 Human Capital Theory

This study is underpinned by the human capital theory, which stipulates that humans are resources and need to be invested in to be more independent in their business (Brüderl, Preisendörfer, & Ziegler, 1992). Their investing in educating children is an important activity to ensure their entrepreneurial skills and financial independence in the future. Investing in human capital is necessary for the development of the economic growth of all countries. Hence, several governments are giving importance to human capital development. However, education is not a success factor in the business, but several other factors count (Becker, Murphy, & Tamura, 1990).

2.1.2 Social Theory of Poverty

Following the social theory of poverty, the poor are deprived of access to social institutions which provide basic needs such as health care, education, job, and safety due to systematic barriers (Bradshaw, 2007). These barriers originate from the social, economic or political perspectives that cause the discrimination of some groups from social wellbeing. This theory explains that poverty can be decreased only when the poor have access to their fundamental rights and access to some economic, social, and financial opportunities in their life. Poverty can be transmitted from parents to children through social beliefs such as lack of planning for the future, excessive expenditure without valid reasons, and unproductive activities (Sameti, Esfahani, & Haghighi, 2012).

Social relationships can influence people's culture and behaviour (Bolin, Lindgren, Lindström, & Nystedt, 2003). For instance, if the neighbourhood and friends are healthy, that might lead to adopt and follow habits that lead to the right health conditions. In general, social networks affects positively as well as negatively individuals' habits. People in touch with close connections who have bad habits, such as smoking, tend to get the same practices. Microfinance institutions are social institutions which are targeting poor and vulnerable individuals, especially women. Those institutions mainly do not require guarantees but social collaterals that are considered a group of people who can guarantee each other to ensure the financing's repayment. So, the group members are usually selective in choosing their friends to be on the safe side of the institution's obligations.

2.2 Previous Studies

Poverty is a severe problem that is mainly affecting third world countries; Mauritania is no exception. Poverty has different dimensions that can be used to measure its extent of threatening. Those dimensions are income level, education of children, nutrition, healthcare, level of consumption, assets owned (Kaka, Abidin, & Islamic, 2013). Microfinance is an effective tool to enhance wellbeing and decrease poverty and enhance financial independence (Lal, 2018). Microfinance institutions' products are suitable for low-income people; hence, they might attract them through the opportunity to increase their income (Afandi & A'yun, 2018).

Islamic microfinance is practice-oriented on ethics and morally more than conventional microfinance (Begum, Alam, Mia, Bhuiyan, & Ghani, 2018). Islamic microfinance has effectively reduced poverty through all its dimensions, mainly education and income level (Owolabi, 2015; Rahim Abdul Rahman, 2010; Rahman & Dean, 2013). Access to financial institutions might not be the real issue because some people have convenient access, but they do not use the products available in the institutions (Beck & De La Torre, 2006; Maulana, Razak, & Adeyemi, 2018; Okello, Bongomin, Ntayi, Munene, & Akol, 2017) Therefore, usage of financial products is crucial and very effective on the financial level of individuals.

The effective use of financial products can reduce poverty and enhance income, especially through mudharaba and musharaka (Shaikh, 2017). Microfinance institutions' main products are micro-Murabaha, micro-saving, micro-takaful, Qard Hassan, and remittances (Nafar & Amini, 2017). Islamic microfinance is considered an alternative to Islamic banks for vulnerable people who can not afford banks' fees. It can also be a better choice than dealing with the informal market, which is an unsecured and perilous domain. Islamic microfinance can increase financial inclusion through the products they offer which also can reduce the poverty enormously (Mohieldin, 2012). The products available in Islamic microfinance can be used by Muslims as well as non-Muslims. Only when those products are used effectively in economic activities can the income level of beneficiaries increase. Several studies have shown the impact of using Islamic microfinance on poverty alleviation, especially the augmentation of

income (Farooqi, Qamar, & Chachi, 2017; Kaka et al., 2013; Tafese, 2014; Toindepi, 2016).

Education is a pillar of the economic growth of countries. There is a relation between the use of microfinance products and children's level of education. Microfinance institutions help the parents financially to be capable of increasing their expenditure on education. Financial inclusion can increase the education level and reduce poverty (Suresh & Kalyanaraman, 2018). When people are financially included in the formal financial system, it will be easy to save their money and invest it properly. Whereas, those who deal with the informal sector are taking a very high financial risk, and their money does not benefit the country's government. Microfinance might not always have an impact on children's education (Holvoet, 2004). The decision to enrol children is based on the financial level of parents. Therefore, several studies did not find a common consensus on the effect of using financial products and enrolling children in school. However, other studies have found mixed results for different household groups based on different characteristics (Maldonado, 2005). The high level of poverty makes children schooling a serious challenge for their parents because they usually prefer working to gain their daily food (Augsburg, De Haas, Harmgart, & Meghir, 2012). Even when parents get a microfinance loan to expand their business, they may attend to labor their children to get the business activity bigger and bigger.

A study done in Bangladesh shows that microfinance products' use did not significantly affect boys' enrollment, but it has influenced girls' schooling (Kandulu, Wheeler, Zuo, & Sim, 2020). This finding may be due to boys who are more capable of working and helping parents in their jobs. Also, the belief in women empowerment encourages many parents to send their daughters to school more than boys to secure their future and be more independent. Nonetheless, other contexts show different results. Microfinance has helped increase children's education, alleviating poverty among people (Hadi, Wahyudin, Ardiwinata, & Abdu, 2015). It is found that children's education will lead to parents' financial independence in the future; hence, cutting the vicious circle of poverty among low-income individuals.

Additionally, another factor that may influence schooling children's decision is the educational training of microfinance institutions. It has been found that the education of children was improved after parents benefited from microfinance institutions' pieces of training mainly, financial literacy and project management (Demont, Baland, & Somanathan, 2019). The more people are involved in microfinance, the more it influences their schooling decisions (Viswanath, 2018). The educational level of parents is also an essential factor in enrolling children. It is rarely seen that educated parents do not send their children to school. However, non-educated parents can always enrol their children if they can afford their school fees.

Microfinance loans have impacted healthcare positively among the beneficiaries (S. Mahmood, Hussain, & Matlay, 2014). When the awareness about health is high, the customers will prioritize using the financing on their own family and children health care more than any other irrelevant matters. People who use microfinance services do not spend financing on health unless critical issues arise. Otherwise, when the financing is high and the customers are not considered under the poverty line, health matters can be increased. Additionally, microfinance's role in poverty alleviation has been exposed in many studies and found to be significant and very relevant (Abdul-Majeed Alaro & Alalubosa, 2018; Khaki & Sangmi, 2017). Those studies demonstrated the potential of reducing poverty and vulnerability among less fortunate people by proposing the usage of microfinance products and services. Even though several studies have focused on microfinance usage, governments in many countries are only concerned about easing access, not on the real use of financial services. Microfinance institutions target mostly women due to their high vulnerability level. The impact of microfinance on women's health and education has been proved by various studies (Hassan & Saleem, 2017a; Murshid, 2018). Microfinance institutions find women more responsible for repaying the financing better than men. The repayment level in Islamic microfinance is higher for women than men due to their fear of accumulating debt (Mohieldin et al., 2011). However, some studies have focused only on the impact of microfinance on men health care and found significant outcome (Balvanz et al., 2018).

Further, a study conducted by Kasali, Ahmad, Lim, Ean, and Lim (2015) found out that the financings taken from microfinance institutions significantly impact the vulnerability among the impoverished population. The effective usage of Islamic microfinance is the most crucial factor in decreasing poverty. Therefore, IsMF products' usage enhances the customers' socio-economic and reduces financial exclusion among unbanked people (Ahmad, Adeyemi, & Khan, 2017). Moreover, Mahmood, Fatima, Khan, and Qamar (2015) examined Islamic microfinance's role in poverty in Pakistan. The study has found that Islamic microfinance improves the poor's lives in several domains, including the health domain. Therefore, the excellent usage of Islamic microfinance products can enhance poverty by improving expenses on health. Rashid studied the role of Islamic microfinance poverty and found that Islamic microfinance positively impacts individuals' wellbeing, especially their physical and mental health.

However, Hassan and Saleem (2017) have shown that Islamic microfinance improves women's wellbeing and increases their financial freedom and sense of self-possession. The variables used in the research are women's income, assets possession, awareness of health care and family harmony, children's education. The findings revealed that Islamic microfinance loans positively impact income, assets ownership, and children's education; however, no effects have been seen in health care and family harmony. Similarly, other studies have shown that the usage of Islamic microfinance services did not impact health care. Rokhman (2013) found that the usage of Islamic microfinance can reduce poverty by increasing income and education; however, there was no significant impact on health care. His study stipulated that health is not a significant dimension of poverty. After reviewing the literature, the conceptual framework is elaborated in Figure1 based on the following hypothesizes:

- H1. The usage of IsMF products has a significant effect on the income level.
- H2. The usage of IsMF products has a significant effect on children's 'education.
- H3. The usage of IsMF products has a significant effect on healthcare.

- H4. Gender has a moderator effect on the relationship between the usage of IsMF products and poverty dimensions.

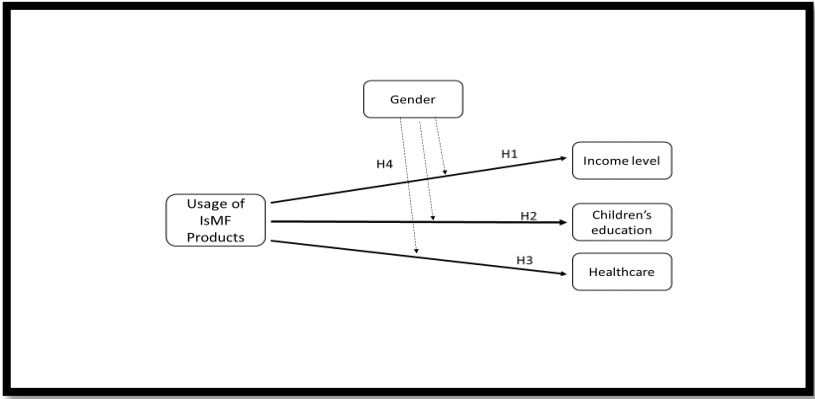


Figure 1: Conceptual Framework

3.0 Data and Methodology

3.1 Data

This study is based on a deductive approach because it is quantitative research. This research's sampling technique is purposive sampling, which is among the non-probability sampling methods. This sampling technique is suitable for this study because it can select respondents based on specific criteria. In this study, there are two main criteria; upon them, the respondents are chosen. Firstly, the respondents should possess microenterprises or business. Secondly, the respondents should be clients of the Islamic microfinance institution (PROCAPEC) in Nouakchott.

The data for this study were collected through the questionnaire method. Using a purposive sampling method through a cross-sectional design, 700 copies of the surveys were distributed to the beneficiaries of the Islamic microfinance PROCAPEC-Nouakchott. There were 493 questionnaires returned, which indicates a response rate of 71 percent. After doing data screening and deleting the outliers, the remaining usable data is 381. This response rate is acceptable because it is above the cut score of 50 percent (Yun & Trumbo, 2000). This response rate

is also due to the nature of the Mauriticians who are not familiar with surveys, and most of the respondents were unwilling to answer the questionnaire. After several visits from the researcher to the institutions, enough sample size was achieved.

3.2 Variables in the Model

3.2.1 Dependent Variables

The dependent variables in this study are the income level, education of children, and healthcare. All of which are measured through a five-point Linkert scale ranging from 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (strongly agree), and 5 (strongly agree). The variable income has six items, while education and healthcare have four items each. All variables have a Cronbach alpha greater than 0.7, indicating higher reliability of items, as shown in Table 1.

3.2.1 Independent Variable

The independent variable of the study is the usage of Islamic microfinance products offered in PROCAPEC-Nouakchott. The variable is self-developed, and it is measured by a four-Linkert scale ranging from 1(never used), 2(rarely used), 3(sometimes used), 4 (frequently used). The products here are four: Murabaha, Qard Hassan, Saving, and Remittance. The variable has a Cronbach alpha greater than 0.7, which indicates the high adequacy and reliability of the items (Hair, Black, Babin, Anderson, & Tatham, 2006), as presented in Table1.

Table 1: Reliability of Constructs

Variable	Number of items	Cronbach's Alpha
Usage	4	.790
Income	6	.970
Education	4	.998
Health	4	.997

4.0 Results and Analysis

4.1 Measurement Model

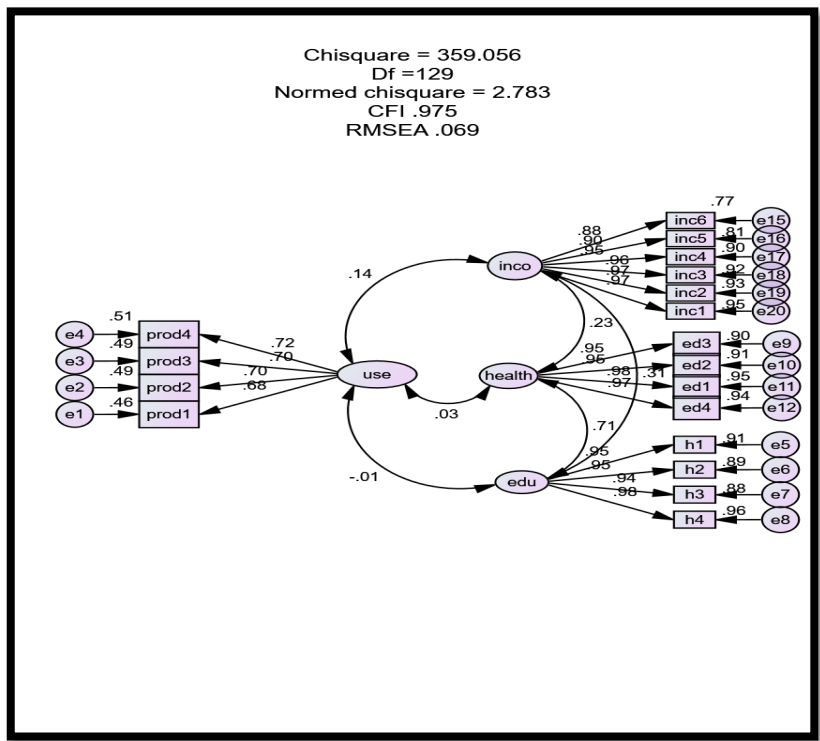


Figure 2: Measurement Model

It is clear from Figure 2 that the measurement model is fit because all the structural equation modelling's (SEM) assumptions are satisfied, such as CFI=.975>.90; RMSEA=.069>0.08, and normed chi-square = 2.783<5, indicating that all values are higher than the cut-score and fulfilling the requirements to use SEM for testing hypotheses. The validity and reliability of the model are presented in Table 2. All the composite reliability values (CR) are greater than 0.7, and the average variance extraction (AVE) is also greater than 0.5. therefore, the model is valid, and there is no problem of reliability found.

Table 2: Convergent and Discriminant Validity

	CR	AVE	MSV	MaxR(H)	Use	Edu	Health	Income
Use	0.822	0.548	0.017	0.895	0.740			
Edu	0.976	0.910	0.499	0.979	-0.026	0.954		
Health	0.980	0.925	0.499	0.982	-0.004	0.707***	0.962	
Income	0.978	0.880	0.093	0.984	0.130	0.305***	0.230***	0.938

4.2 Hypothesized Model (SEM Model)

As shown in Figure 3, the hypothesized model is fit and valid because it has excellent indices, all in the normal range of the values confirmed by experts in the field (Tabachnick, Fidell, & Ullman, 2007). The accepted values of the rule of thumb are presented in Table 3. The following step is to test the hypotheses, and the results are shown in Table 4.

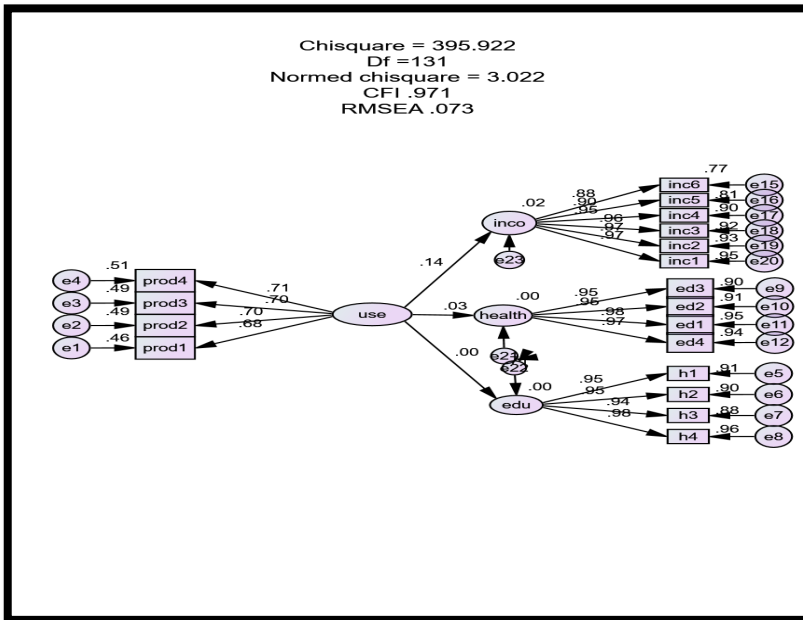


Figure 3: Hypothesis Model

Table 3: Summary of the Hypothesised Model Indices

Indices	Rule of thumb	Value in the model
Normed chi-square	<5	3.022
P-value	>0.005	.031
CFI	>.90	.971
RMSEA	<.08	.073
IFI	>.90	.970
TLI	>.90	.965
NFI	>.90	.944

Table 4. Regression Weights and Hypothesis Decision

		Estimate	SE.	CR.	P	DECISION
Income	← use	.289	.122	2.375	.018	SUPPORTED
Health	← use	.096	.163	.585	.558	NOT SUPPORTED
Edu	← use	-.005	.154	-.033	.974	NOT SUPPORTED

Table 4 presents that the relationship between the usage of Islamic microfinance products and the income level is positive and statistically significant. The p-value is $.018 < .05$, and the CR is $2.375 > 1.96$, indicating that the relationship is significant and positive. Therefore, the first hypothesis (H1) is accepted and supported by several studies that demonstrate similar results (Mahmood, Fatima, Khan, & Qamar, 2015b; Nafar & Amini, 2018; Shaikh, 2017b). Consequently, the more the beneficiaries use the financial products offered, the better income they generate.

Table 4 shows that the relationship between IsMF products' usage is not significant because the $p\text{-value} = .558 < 0.05$, and the $CR = .585 < 1.96$. Hence, the hypothesis (H2) is rejected. This finding is not shocking because it was expected based on previous studies. Several studies have found no significant relationship between the usage of

microfinance products and children's education (Augsburg et al., 2012; Kandulu et al., 2020; Maldonado, 2005). These findings show that children's education is not related to using IsMF products by parents. The results can be explained either by parents who are not aware enough of using the financial products to enrol their children in schools or parents' low financial revenues that enable the affordability of schools' tuition fees. It may also be because children are already in schools, and parents spend their small business profits on the house's expenditure. This result may also be due to the low participation of microfinance institutions in educating parents about the importance of enrolling children.

Table 4 illustrates that the relationship between the usage of IsMF products and health is not significant because of the $p\text{-value}=.974 < 0.05$, and the absolute value of $CR=.033 < 1.96$. Therefore, the hypothesis (H3) is rejected. The usage of IsMF products does not significantly impact the variable health care in the context of Nouakchott-Mauritania. This finding is not shocking because it was expected based on previous studies. Several studies have found no significant relationship between the usage of IsMF products and health (Hassan & Saleem, 2017; Rokhman, 2013). These findings show that Mauritians who use Islamic microfinance institution products did not increase their health care expenses. Although this finding contrasts with several literature results, such as (Abdul-Majeed Alaro & Alalubosa, 2018; Khaki & Sangmi, 2017), it is in line with other studies that found that Islamic microfinance does not have an impact on the beneficiaries' health care. This finding shows that Islamic microfinance did not contribute to the investment in health in Mauritania. Hence, the Mauritians who use Islamic microfinance services did not improve their health care with those products offered. Lack of awareness about eating healthy food and maintain a healthy shape is another factor that leads to this result.

Table 5 shows that gender does not have any moderator effect on the model's relationships because the absolute value of the z-score is greater than the cut score of 0.05 for the three relationships. Therefore, gender is not a moderator between the relationships in the model. Hence, H4 is rejected.

Table 5: Gender Moderation Effect

Relationship			Male		Female		z-score
			Estimate	P	Estimate	P	
Income	←	Use	0.501	0.18	0.23	0.044	-0.694
Health	←	Use	-0.479	0.299	0.218	0.187	1.424
Edu	←	Use	-0.44	0.299	0.105	0.508	1.205

5.0 Conclusion

This study has three main objectives: to investigate the impact of using Islamic microfinance products on the income, children's education, and healthcare of the beneficiaries of PROCAPEC-Nouakchott. The findings revealed a positive and significant impact of using Islamic microfinance products on the income level. Hence, H1 is supported and accepted. However, there were no statistically significant relationships between the usage of IsMF products and children's education; and usage of IsMF products and health. Thus, the hypothesizes H2 and H3 are accepted. Gender has no moderator effect on the relationships in the model. Hence, H4 is rejected.

The practitioners and managers of Islamic microfinance should adopt strategies that increase financial inclusion, especially the usage of financial products to increase beneficiaries' wellbeing and reduce poverty in the country. Also, it is suggested that policymakers invest in human capital mainly through children's education because it is the fundamental pillars of economic growth. The government and managers of Islamic microfinance institutions are encouraged to launch a campaign of awareness among parents to know the importance of education. It is endorsed that the policymakers and microfinance operators launch campaigns of awareness on the importance of using Islamic microfinance to enhance people's wellbeing and improve their health issues. It is also indispensable for microfinance managers to arrange training on how to use the microfinance institutions' customers' products and services effectively to impact their lives. Increasing financial education will lead to the decrease of poverty in the country. Therefore, the government should

raise awareness among people about Islamic microfinance products' role in their welfare.

The findings help the policymakers and managers of Islamic microfinance consider the suitability strategies of awareness to patronize Islamic microfinance products to enhance Mauritians' wellbeing. Several studies have discussed the dimensions of financial inclusion; however, few have studied a single dimension, such as the usage of financial products. This research study the effect of using Islamic financial products to fill the gap in the literature about this topic. There is a lack of Mauritania studies about financial inclusion and poverty; hence, this study is a pioneer in this field in this country. This article is using purely quantitative data. Further research might use qualitative. The study focused only on three dimensions of poverty which are income, education, and health. Other studies can include more dimensions. The research is limited to the context of PROCAPEC- Nouakchott, which can be extended to other Islamic microfinance institutions.

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