EMPOWERING LEAD USERS: KENYA'S THREE-PART FORMULA FOR FINTECH INNOVATION SUCCESS

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Abstract

Lead user innovation is one of the key factors which define new product development and market success, but the characteristics of user innovators in emerging markets are still not explored enough. This research aims at finding out the effect of work experience, autonomy and number of partners in innovation on success of lead user innovation in Kenya's Fintech industry. The quantitative data was collected through a survey of 321 lead user innovators while qualitative data was collected through 36 in-depth interviews. This analysis demonstrates that work experience has an influence on success through innovation partners and indirectly through the work experience, which has an influence on success directly through autonomy but has no indirect impact on success through partners. Thus, the study adds to the body of literature on user innovation by identifying factors that are essential for success in an emerging market and by providing recommendations for organizations that encourage user-driven innovation. The emphasis on the Kenyan fintech segment and the consideration of the mediating roles of innovation partners contribute to the novelty of innovation research. The results also highlighted the fact that the key factors influencing lead user innovation success are work experience, autonomy, and collaboration.

Keywords: lead user innovation, work experience, autonomy, innovation partners, fintech

1. INTRODUCTION

Lead user innovation is a significant driver of new product development and market success (von Hippel, 2005). Lead users often develop novel solutions to address their specific requirements, leading to commercially attractive products and services (Franke et al., 2006). The importance of lead user innovation has been highlighted in various industries (Pohjosenperä et al., 2019; Hyysalo, 2009;

Benlian & Hess, 2011).

Despite the growing recognition of lead user innovation, there is a lack of understanding of the factors that contribute to its success (Herstatt & von Hippel, 1992). The influence of work experience and autonomy on lead user innovation success remains largely unexplored and the role of innovation partners in mediating these relationships has not been thoroughly examined (Hienerth & Lettl, 2017; Mihajlovic et al., 2024).

Understanding the factors that drive successful user innovation is crucial for organizations seeking to harness the potential of user-driven innovation. Without a clear understanding of these factors, organizations may struggle to identify, engage, and support innovative users effectively, resulting in missed innovation opportunities, reduced market competitiveness, and suboptimal resource allocation.

This study investigates the impact of work experience and level of autonomy on lead user innovation success by considering the mediating effect of the number of innovation partners. Work experience refers to the domain-specific knowledge, skills, and expertise that lead user innovators acquire through their professional involvement in the Kenyan fintech sector (Schweisfurth & Raasch, 2015; Figueiredo & De Pretto, 2021). The level of autonomy refers to the degree of control, discretion, and independence that leads user innovators to engage in innovative activities (Lilien et al., 2002; Sauermann, 2018). This study employs a mixed-method approach, combining a quantitative survey and qualitative interviews, to provide a comprehensive understanding of the complex interplay between individual characteristics and collaboration in driving lead user innovation success.

This study contributes to the advancement of lead user innovation literature by addressing the identified research gaps and providing empirical evidence on the factors driving lead user innovation success. The findings offer practical insights for organizations seeking to foster and benefit from lead user innovation, particularly in emerging markets, such as Kenya. By understanding the influence of work experience, autonomy, and the role of innovation partners on lead user innovation success, organizations can develop targeted strategies to identify, engage, and support lead users effectively. This research not only contributes to the academic discourse on lead user innovation but also has significant practical and policy implications for fostering innovation and entrepreneurship in emerging markets.

2. LITERATURE REVIEW

This literature review builds on the lead user theory and prior research on the factors influencing innovation success to investigate the role of work experience, autonomy, and innovation partners in driving lead user innovation success.

2.1. Lead User Theory

Lead user theory, introduced by von Hippel (1986), has been widely recognized as a seminal framework for understanding user-driven innovation. The theory posits that lead users who experience needs ahead of the majority of the market and stand to benefit significantly from finding solutions are more likely to innovate than are other

users (von Hippel, 1986). Numerous studies have applied the lead user theory to various contexts, showcasing its versatility and relevance across industries (Chatterji & Fabrizio, 2014; Benlian & Hess, 2011; Franke & Shah, 2003). However, while prior research has established the importance of lead users in driving innovation, there is a lack of understanding of the specific factors that contribute to lead user innovation success, particularly in emerging markets (Schreier & Prügl, 2008; Schuhmacher & Kuester, 2012; Hani et al., 2022). This study aims to address this gap by investigating the influence of work experience, autonomy, and the role of innovation partners on lead user innovation success in the Kenyan fintech industry, which is characterized by rapid growth, technological advancement, and a growing community of innovators and entrepreneurs (Ndung'u & Signé, 2020; Chirchietti, 2021).

2.2. Work Experience and Innovation Success

Work experience has been identified as a critical factor influencing innovation success, as it provides individuals with domain-specific knowledge and skills necessary for problem identification and solution development (Amabile, 1996; Shin et al., 2020). In the context of lead user innovation, work experience is particularly relevant, as it enables lead users to leverage their expertise to create novel and valuable innovations (Schuhmacher & Kuester, 2012; Figueiredo & De Pretto, 2021). Schweisfurth and Raasch (2015) and Faullant et al. (2012) provided empirical evidence supporting a positive relationship between lead users' work experience and innovation success. However, these studies have been conducted

in developed economies, leaving a gap in understanding the role of work experience in lead user innovation success in emerging markets like Kenya, where the institutional, technological, and cultural contexts may differ significantly (Agarwal et al., 2018; Ramdani et al., 2019). By examining this relationship in the Kenyan fintech sector, this study contributes to the literature by providing insights into context-specific factors that drive user innovation success in developing countries.

2.3. Autonomy and Innovation Success

Autonomy, or the degree of control and discretion an individual has over their work, has been recognized as a key driver of innovation (Amabile, 1996; Zhu et al., 2018). Autonomy is crucial in the context of lead user innovation because it allows individuals to explore new ideas and experiments with different solutions without the constraints of organizational boundaries (Lilien et al., 2002; Sauermann, 2018). Prior research by Franke et al. (2006) and Stock et al. (2016) demonstrated the positive influence of autonomy on lead user innovation engagement and performance. However, these studies focus on lead users in developed countries, where institutional and cultural contexts may differ significantly from those in emerging markets (Saldanha et al., 2017; Ochieng & Gichoya, 2021). By investigating the relationship between autonomy and lead user innovation success in the Kenyan fintech sector, this study contributes to the literature by providing insights into the role of autonomy in driving innovation in developing countries, where institutional support for innovation may be limited.

2.4. The Role of Innovation Partners

Innovation partners such as other lead users, suppliers, or customers play a crucial role in the success of lead user innovation by providing access to complementary knowledge, resources, and skills (Bogers et al., 2010; Franke & Shah, 2003; Schaarschmidt et al., 2018). Hienerth and Lettl (2017) and Mahr and Lievens (2012) provided empirical evidence highlighting the positive influence of collaboration with innovation partners on lead user innovation success. However, these studies have been conducted in developed economies, where the innovation ecosystem and collaborative networks may be more mature and supportive (Smith, 2020; Morikawa, 2021). By examining the role of innovation partners in lead user innovation success in the Kenyan fintech sector, this study contributes to the literature by providing insights into the importance of collaboration in driving innovation in a developing country context, where access to resources and expertise may be limited.

The Kenyan fintech sector provides an exciting context for this study as it is characterized by rapid growth, technological advancements, and a growing community of innovators and entrepreneurs (Ndung'u & Signé, 2020). However, despite the sector's potential, there is a lack of research on the factors that drive innovation success, particularly among lead users (Chirchietti, 2021; Onsongo, 2019). We assume that individuals with more work experience in the fintech industry are likely to develop a larger network of contacts and a better understanding of the industry landscape. This experience can lead to more opportunities for partnerships and collaboration with other fintech companies.

By investigating the influence of work experience, autonomy, and the role of innovation partners on lead user innovation success in the Kenyan fintech sector, this study addresses this research gap and provides valuable insights for practitioners and policymakers seeking to foster innovation in the emerging markets.

Despite the growing body of literature on lead user innovation, significant gaps remain in our understanding of the factors that contribute to lead user innovation success, particularly in emerging markets (Schreier & Prügl, 2008; Schuhmacher & Kuester, 2012; Hani et al., 2022). While prior research has investigated the characteristics and motivations of lead users (Schweisfurth & Dharmawan, 2019; Bohnsack & Pinkse, 2017), the influence of work experience and autonomy on lead user innovation success has not been thoroughly examined in emerging markets, where institutional, technological, and cultural contexts may differ significantly from those in developed economies (Agarwal et al., 2018; Ramdani et al., 2019). Moreover, the role of innovation partners in Mediating these relationships has received limited attention (Hienerth & Lettl, 2017; Schaarschmidt et., 2018). These limitations in the current literature are particularly concerning, as they hinder the development of targeted strategies to foster lead-user innovation in emerging markets, where the potential for inclusive innovation and economic growth is significant (Onsongo, 2019; Chirchietti, 2021).

Addressing these limitations is crucial for organizations seeking to harness the potential for lead-user innovation in emerging markets. Without a clear understanding of the factors that drive lead user innovation success in these contexts, organizations may struggle to identify,

engage, and support lead user innovators effectively, leading to missed opportunities for innovation and growth (Smith, 2020; Morikawa, 2021). This study addresses these critical gaps in the literature by investigating the impact of work experience, autonomy, and number of innovation partners on lead user innovation success in the Kenyan fintech sector. By providing empirical evidence and insights into these relationships, this study contributes to the advancement of the lead user innovation theory and offers practical implications for organizations seeking to foster innovation in emerging markets.

This study builds on the lead user theory and prior research on the factors influencing innovation success to investigate the role of work experience, autonomy, and innovation partners in driving lead user innovation success in the Kenyan fintech sector. By addressing the identified research gaps and providing context-specific insights, this study contributes to the advancement of lead user innovation literature and offers practical implications for fostering innovation in emerging markets.

2.5. The Hypotheses

Based on the theoretical background and the gaps identified in the literature, we propose the following hypotheses:

H1: Work experience is positively associated with lead user innovation success in the fintech sector. This draws on the findings of Schweisfurth and Raasch (2015) and Figueiredo and De Pretto (2021), we expect that greater work experience in the fintech sector will provide lead users with the domain knowledge, skills and industry connections necessary for successful innovation.

H2: Autonomy is positively associated with lead user innovation success in the fintech sector. This is drawn from the work of Stock et al (2016) that higher levels of autonomy will enable lead users to experiment, take risks, and pursue novel ideas more freely, leading to greater innovation success.

H3: The number of innovation partners is positively associated with lead user innovation success in the fintech sector. This hypothesis is drawn from the findings of Schaarschmidt et al. (2018) that collaboration with a larger number of innovation partners will provide lead users with access to diverse resources enhancing their innovation success.

H4: The number of innovation partners mediates the relationship between work experience and lead user innovation success.

H5: The number of innovation partners mediates the relationship between autonomy and lead user innovation success.

3. DATA AND METHODOLOGY

This study employs a mixed-method approach to address the limitations of prior research and provide new insights into the factors driving the success of lead user innovation in emerging markets. The mixed-method design allows for a comprehensive examination of the factors that contribute to user innovation success (Creswell & Plano Clark, 2017). The research began with a quantitative survey to examine the relationships between work experience, level of autonomy, number of innovation partners, and innovation success. The qualitative phase followed semi-structured interviews to gain deeper insights into the mechanisms behind these relationships and clarify the

non-significant findings from the quantitative phase.

3.1. Quantitative Phase

The survey instrument for the quantitative phase was developed by adapting existing validated scales and refining them through a pilot study involving 30 lead user innovators. Work experience was measured using a scale adapted from Schweisfurth and Raasch (2015), and autonomy was assessed using a scale adapted from Spreitzer (1995). The number of innovation partners was measured using a scale specifically developed for this study and innovation success was evaluated using a scale adapted from Griffin and Page (1996). Additionally, control variables of industry, company size, and geographic location were included in the survey.

Given that Kenya has a population of 54 million and the number of lead users in the fintech sector is unknown, a multi-stage sampling approach was employed. First, stratified random sampling was used to select the five major cities in Kenya to ensure geographical representation. Within each city, a purposive sampling technique is applied to identify fintech companies, incubators, and innovation hubs. These organizations were contacted to assist in identifying lead user innovators in the fintech sector.

Owing to the unknown population size of lead user innovators in the Kenyan fintech sector, the sample size was determined using Cochran's formula (1) for unknown population size (Cochran, 1963):

$$n = (Z^2 * p * (1-p)) / e^2 \qquad (1)$$

Where:
n = sample size

Z = z-value for the desired confidence level (1.96 for 95% confidence)

p = estimated proportion of the population (0.5 was used to maximize sample size.

e = desired margin of error (0.05 for ±5%)

Using a 95% confidence level and a 5% margin of error, the calculated sample size was

$$n = (1.96^2 * 0.5 * (1-0.5)) / 0.05^2 = 385$$

The sample size was increased by 20% to account for potential nonresponses and incomplete data, resulting in a final target sample size of 462 lead user innovators. The survey was administered online using Qualtrics and participants were recruited through identified fintech companies, incubators, and innovation hubs.

A total of 321 complete responses were received, representing a response rate of 69.5%. The sample size was deemed to be appropriate for several reasons. First, according to Green (1991), a minimum sample size of 50 + 8k is required for the regression analysis, where k is the number of predictors. This study identified three predictors (work experience, autonomy level, and the number of innovation partners), resulting in a minimum required sample size of 74. The realized sample size of 321 participants greatly exceeded this minimum requirement.

Second, the realized sample size of 321 was close to the calculated sample size of 385 using the Cochran formula for a 95% confidence level and 5% margin of error. Although the realized sample size is slightly smaller than the target sample size of 462, it still provides a reasonable representation of the population, considering the unknown population size and the difficulty in identifying and recruiting lead user

innovators in the Kenyan fintech sector.

Third, a post hoc power analysis using G*Power 3.1 (Faul et al., 2009) revealed that a sample size of 321 provided a power of 0.99 for detecting a medium effect size ($f^2 = 0.15$) at an alpha level of 0.05, for a regression analysis with three predictors. This high power indicates that the sample size was sufficient to detect significant effects and to reduce the risk of Type II errors.

Therefore, a realized sample size of 321 was deemed appropriate for the OLS regression analysis used to calculate the mediation effect, as it exceeded the minimum required sample size based on the number of predictors, was close to the sample size calculated using the Cochran formula, and provided high statistical power to detect significant effects.

Confirmatory factor analysis and Cronbach's alpha were used to ensure the validity and reliability of the survey instrument, confirmatory factor analysis (CFA) and Cronbach's alpha were employed. The CFA results demonstrated a good fit between the data and the measurement model, with a comparative fit index (CFI) of 0.95, root mean square error of approximation (RMSEA) of 0.06, and standardized root mean square residual (SRMR) of 0.04. Furthermore, all constructs exhibited satisfactory reliability, with Cronbach's alpha values exceeding 0.70.

3.2. Qualitative Phase

The qualitative phase of the study complements the quantitative findings by providing rich, in-depth insights into the experiences and perspectives of lead user innovators. A purposive sample of 50 lead user innovators was selected from the quantitative phase participants, ensuring a balanced representation of the five cities and various fintech subsectors (e.g., mobile payments, lending, and insurance). Semi-structured interviews were conducted via video conferencing or in person, depending on the participant's preference and location, and lasted approximately 60 minutes each. The interviews were audio-recorded and transcribed verbatim for analysis.

A semi-structured interview guide was developed based on quantitative findings and relevant literature. The guide includes open-ended questions exploring the experiences, perceptions, and insights of lead user innovators regarding the factors influencing their innovation success, with a focus on clarifying the non-significant findings and understanding the mechanisms behind these relationships. The interview guide was reviewed by a panel of three experts on lead user innovation and qualitative research, to ensure content validity.

3.3. Data Analysis

In the quantitative phase, we conducted a mediation analysis to determine whether the number of partners (ppnumber) mediates the relationship between work experience (workexp) and success as well as the relationship between autonomy level (autolevel) and success. Mediation occurs when the effect of an independent variable on a dependent variable is transmitted through the mediator variable. In other words, the mediator variable helps explain the underlying mechanism or process through which the independent variable influences the dependent variable. The steps for testing mediation were as follows:

1. Total Effect (Path C): Regress success on work experience and autonomy levels to

establish the total effect of these variables on success.

2. Path A: Regress the mediator (ppnumber) on independent variables (work experience and autolevel).

3. Path B: Regress success on the mediator (ppnumber), controlling for workexps and autolevels.

4. Direct Effect (Path C'): The direct effect of work experience and autolevels on success, controlling for ppnumber.

For the qualitative phase, we employed thematic analysis, as outlined by Braun and Clarke (2006), to analyze the data collected through interviews. This analysis involved an iterative process of coding the data, categorizing the codes, and identifying overarching themes that shed light on the factors that influence user innovation success. To facilitate the analysis, NVivo 12, a qualitative data analysis software package, was used. Intercoder reliability was assessed using Cohen's kappa coefficient to ensure reliability of the coding process. Two independent coders analyzed a subset of the interview data, representing 20% of the total interviews. Intercoder reliability was substantial, with a Cohen's kappa value of 0.78, indicating a high level of agreement between the coders.

The study methodology had certain limitations that should be acknowledged. One potential limitation is the risk of self-report bias, as the data collected through surveys and interviews relied on participants' own perceptions and experiences. Additionally, the cross-sectional design of the study limited its ability to establish causal relationships between the variables examined. These limitations were carefully considered and discussed in the context of the findings of this study.

Throughout the research process, ethical considerations are of utmost importance. All participants were provided with informed consent forms that clearly outlined the purpose of the study, nature of their participation, and their rights as participants. Confidentiality and data protection measures were strictly adhered to, ensuring that participants' personal information and responses were kept secure and anonymous. The study's research protocol was rigorously reviewed and approved by the Institutional Review Board (IRB) of Strathmore University prior to data collection. All participants provided informed consent before participating in any study-related activity.

4. RESULTS

4.1. Quantitative Results

In terms of the results, we start with Path C, which shows the total effect, followed by Paths A and B. The total effect (Path C) regression results revealed that both work experience and autonomy level had significantly positive effects on success. The coefficient for work experience was significant ($\beta = 0.113$, $p = 0.010$), indicating that success tended to increase as work experience increased. Similarly, the coefficient for the autonomy level was significant ($\beta = 0.016$, $p = 0.005$), suggesting that higher levels of autonomy are associated with greater success.

To examine Path A, we regressed the mediator variable number of partners (ppnumber) on the independent variables of work experience (workexp) and autonomy level (autolevel). The regression results for Path A, shown in Table 2, indicate that both work experience and autonomy level have

significant positive effects on the number of partners. The coefficient of work experience was significant ($\beta = 0.130$, p = 0.005), suggesting that individuals with more work experience tended to have a higher number of partners. Likewise, the coefficient for the autonomy level was significant ($\beta = 0.016$, p = 0.009), indicating that individuals with higher levels of autonomy are more likely to have a greater number of partners.

To investigate Path B, we regressed success on the mediator variable number of partners (ppnumber), while controlling for work experience (workexp) and autonomy level (autolevel). The regression results in Table 3, for Path B, show that when controlling for the number of partners, the coefficient for work experience is not significant ($\beta = 0.070$, p = 0.095), suggesting that work experience does not have a significant direct effect on success. However, the coefficient for the autonomy level remained significant ($\beta = 0.011$, p = 0.044), indicating that the autonomy level had a significant direct effect on success, even when controlling for the number of partners. Furthermore, the coefficient for the number of partners was significant ($\beta = 0.331$, p < 0.001), demonstrating that the number of partners had a significant positive effect on success while holding work experience and autonomy level constant.

Table 1. Total Effect - Path C regression

Source	SS	df	MS			
				Number of obs	=	321
				F(2, 318)	=	7.09
Model	29.388	2	14.694	Prob > F	=	0.001
Residual	659.079	318	2.073	R-squared	=	0.043
				Adj R-squared	=	0.037
Total	688.467	320	2.151	Root MSE	=	1.440

success	Coefficient	Std. err.	t	P>t	[95% conf.	interval]
workexp	0.113	0.044	2.580	0.010	0.027	0.199
autolevel	0.016	0.006	2.830	0.005	0.005	0.027
_cons	1.257	0.164	7.690	0.000	0.935	1.579

Table 2. Path A regression

Source	SS	df	MS			
				No. of obs	=	321
				F(2, 318)	=	7.29
Model	32.714	2	16.7	Prob > F	=	0.001
Residual	713.180	318	2.243	R-squared	=	0.044
				Adj R-squared	=	0.038
Total	745.894	320	2.331	Root MSE	=	1.498

ppnumber	Coefficient	Std. err.	t	P>|t|	[95% conf.	interval]
workexp	0.130	0.045	2.860	0.005	0.041	0.219
autolevel	0.016	0.006	2.630	0.009	0.004	0.027
_cons	2.432	0.170	14.300	0.000	2.098	2.767

Table 3. Path B regression

Source	SS	df	MS		No. of obs		=	321
					F(3, 317)		=	19.56
Model	107.551	3	35.850		**Prob > F**		=	0.000
Residual	580.917	317	1.833		**R-squared**		=	0.156
					Adj R-squared		=	0.148
Total	688.467	320	2.151		**Root MSE**		=	1.354

success	Coefficient	Std. err.	t	P>t	[95% conf.	interval]
ppnumber	0.331	0.051	6.530	0.000	0.231	0.431
workexp	0.070	0.042	1.680	0.095	-0.012	0.152
autolevel	0.011	0.005	2.020	0.044	0.000	0.022
_cons	0.452	0.197	2.290	0.023	0.064	0.840

The direct effect (Path C') was estimated in the previous step (Path B) when success was regressed on the number of partners (**ppnumber**), work experience (**workexp**), and autonomy level (autolevel). In this regression, the coefficients for work experience and autonomy level represent the direct effects of these variables on success, controlling for the mediator variable and the number of partners. These coefficients provide insight into the direct relationship between the independent and dependent variables, while holding the mediator constant.

These results suggest that the number of partners (ppnumber) acts as a mediator in the relationship between autonomy level, work experience (workexp), and success, given the significant effect of autonomy level and work experience on the number of partners (Path A) and the significant effect of the number of partners on success, controlling for work experience and autonomy level (Path B). However, the direct effect of work experience on success became non-significant when controlling for the number of partners, indicating a partial mediation.

For the Autonomy level (**autolevel**), the evidence for mediation is strong because of the significance of its effect on the number of partners (Path A) and the significant direct effect on success (Path C and Path B). These findings suggest that the number of partners plays a crucial role in mediating the relationship among lead users' autonomy level, work experience, and success.

4.2. Qualitative Findings

The interviews revealed several recurring themes that provide rich insights into the factors influencing the success of user innovation.

4.2.1. Perspectives on work experience

Most of the interviewed lead user innovators emphasized the crucial role of work experience in driving innovation success. Many participants highlighted how their extensive experience in the fintech sector enabled them to identify problems, develop effective solutions, and navigate the challenges of bringing innovation to the market. As one innovator stated, *"My years of working in fintech have given me a deep understanding of the market, the users, and the technical aspects. This knowledge has been invaluable in developing successful innovations."*

The interviews also revealed the importance of collaboration and innovation partners in the success of user innovation. Many participants discussed how collaboration with lead users, industry experts, and stakeholders helped them access complementary knowledge, resources, and skills. One innovator remarked, *"Collaborating with other innovators and partners has been a game-changer for me. It has allowed me to tap into a wider pool of expertise and resources, which has greatly enhanced the quality and impact of my innovations."*

However, a few participants offered contrasting views on the role of collaboration. Some innovators have emphasized the importance of individual effort and self-reliance in driving innovation success. As one participant noted, *"While collaboration can be beneficial, I believe that the most groundbreaking innovations often come from individual vision and dedication. It's important not to lose sight of that."*

4.2.2. Perspectives on autonomy and innovation success

The interviews provide mixed perspectives on the role of autonomy in the success of lead user innovation. Many participants highlighted the importance of freedom and flexibility to explore new ideas and conduct experiments with different *solutions. One innovator stated, "Autonomy is crucial for innovation. It allows me to think outside the box, take risks, and pursue ideas that might seem unconventional at first."*

However, some participants acknowledged potential challenges associated with high levels of autonomy. A few innovators have noted that excessive autonomy could lead to a lack of structure and coordination, which could hinder innovation success. As one participant remarked, *"While autonomy is important, it's also essential to have some level of structure and guidance. Without it, innovation efforts can become disjointed and less effective."*

Several participants also discussed the importance of striking a balance between autonomy and collaboration. They emphasized that while autonomy is necessary for fostering creativity and experimentation, collaboration is crucial for bringing ideas to fruition and driving innovation success. One innovator stated, *"I think the key is to find a balance between autonomy and collaboration. You need the freedom to explore and develop ideas, but you also need the support and input of others to turn those ideas into successful innovations."*

The qualitative findings provide rich insights into the complex interplay among work experience, collaboration, and autonomy in driving user innovation success. The interviews largely support the quantitative results, highlighting the positive impact of work experience and collaboration on innovation outcomes. However, the findings also revealed nuanced perspectives on the role of autonomy, with some participants emphasizing its importance and others acknowledging its potential challenges. Overall, the qualitative phase of the study adds depth and context to the quantitative findings, providing a more comprehensive understanding of the factors that influence user innovation success in the Kenyan fintech sector.

5. DISCUSSION

This study contributes to the literature on lead user innovation by investigating the factors driving lead user innovation success in the Kenyan fintech sector. The findings offer valuable insights into the influence of work experience, autonomy, and the role of innovation partners in leading user innovation success, addressing important research gaps and providing empirical evidence to support the development of targeted strategies for fostering user-driven innovation in emerging markets.

5.1. Work Experience and Lead User Innovation Success

Our results demonstrate that work experience has a significant positive effect on lead user innovation success both directly and indirectly through the number of innovation partners. This finding aligns with prior research highlighting the importance of domain-specific knowledge and expertise in driving innovation success (Amabile, 1996; Schuhmacher & Kuester, 2012; Figueiredo & De Pretto, 2021). Lead users with extensive work experience in the fintech sector are better equipped to identify problems, develop effective solutions, and navigate the challenges associated with bringing innovation to the market. This finding extends the work of Schweisfurth and Raasch (2015) and Faullant et al. (2012) by providing empirical evidence of the role of work experience in leading user innovation success in the context of an emerging market.

These qualitative findings strongly support the quantitative results with many lead user innovators emphasizing the crucial role of work experience in driving innovation success. As one participant noted, "My years of working in fintech have given me a deep understanding of the market, the users, and the technical aspects. This knowledge has been invaluable in developing successful innovations." This sentiment was echoed by several other interviewees, reinforcing the importance of domain-specific expertise in fostering successful lead-user innovation. These findings are consistent with recent studies that highlight the importance of work experience and domain knowledge in driving innovation outcomes (Shin et al., 2020; Figueiredo & De Pretto, 2021).

The mediating effect of number of innovation partners on the relationship between work experience and innovation success highlights the importance of collaboration in leveraging the expertise of experienced lead users. As lead users gain more work experience, they are likely to develop a larger network of innovation partners, which in turn enhances their ability to access complementary knowledge, resources, and skills necessary for innovation success (Bogers et al., 2010; Franke & Shah, 2003; Schaarschmidt et al., 2018). This finding extends Hienerth and Lettl (2017) and Mahr and Lievens (2012) by demonstrating the mediating role of innovation partnerships in the relationship between work experience and user innovation success.

5.2. Autonomy and Lead User Innovation Success

Contrary to expectations, our results indicate that autonomy has a significant direct effect on lead user innovation success but does not have a significant indirect effect through the number of innovation partners.

This finding partially aligns with prior research that highlights the importance of autonomy in driving innovation (Amabile, 1996; Franke et al., 2006; Stock et al., 2016; Zhu et al., 2018). Lead users with higher levels of autonomy are more likely to engage in innovative activities and develop novel solutions because they have the freedom to explore new ideas and experiments using different approaches without the constraints of organizational boundaries (Lilien et al., 2002; Sauermann, 2018).

However, the nonsignificant indirect effect of autonomy on innovation success through the number of innovation partners suggests that the relationship between autonomy and collaboration may be more complex than anticipated. Although lead users with higher levels of autonomy may be more likely to engage in innovative activities, they may not necessarily seek out or benefit from more innovation partners. This finding contrasts with the work of Hienerth and Lettl (2017) and Mahr and Lievens (2012), who found a positive relationship between lead-user collaboration and innovation success.

The qualitative findings provide nuanced perspectives on the role of autonomy in user innovation success. Although many participants highlighted the importance of freedom and flexibility in exploring new ideas, some acknowledged the potential challenges associated with high levels of autonomy. As one innovator remarked, "While autonomy is important, it's also essential to have some level of structure and guidance. Without it, innovation efforts can become disjointed and less effective." These mixed views suggest that the relationship between autonomy and innovation success may be more complex than initially anticipated, warranting further investigation

into the optimal balance between autonomy and structure in lead user innovation contexts. This insight aligns with recent research that emphasizes the need for a balanced approach to autonomy in innovation contexts (Seo et al., 2022; Zhu et al, 2018).

One possible explanation for this finding is that the relationship between autonomy and collaboration may be contingent on other factors, such as the nature of the innovation (incremental vs. radical), stage of the innovation process, or specific characteristics of lead users (e.g., personality traits and motivations). For example, highly autonomous lead users may prefer to work independently in the early stages of the innovation process, seeking out collaboration only when necessary to access specific resources or expertise (Lettl et al., 2006).

5.3. The Role of Innovation Partners

Our findings highlight the critical role of innovation partners in driving lead user innovation success, both as mediators of the relationship between work experience and innovation success, and as direct influences on innovation outcomes. This finding aligns with prior research emphasizing the importance of collaboration and knowledge sharing in user-driven innovation (Bogers et al., 2010; Franke & Shah, 2003; Hienerth & Lettl, 2017; Mahr & Lievens, 2012; Schaarschmidt et al., 2018). By collaborating with a larger number of innovation partners, lead users can access diverse knowledge, resources, and skills that enhance their ability to develop and commercialize successful innovations.

These qualitative findings strongly support the quantitative results, with many

lead user innovators emphasizing the importance of collaboration and innovation partners in driving successful innovation. As one participant stated,' Collaborating with other innovators and partners has been a game-changer for me. It has allowed me to tap into a wider pool of expertise and resources, which has greatly enhanced the quality and impact of my innovations." This insight is consistent with recent studies that highlight the value of collaboration and knowledge sharing in fostering innovation (Smith, 2020; Morikawa, 2021).

However, a few participants also highlighted the importance of individual effort and self-reliance in driving innovation success, suggesting that the role of collaboration may vary depending on the specific context and nature of the innovation. This finding is in line with recent research emphasizing the need for a balanced approach to collaboration and individual efforts in innovation contexts (Seo et al., 2022). Seo et al. (2022) found that too many external partnerships could constrain the autonomy and flexibility of R&D teams, leading to reduced innovation outcomes. Therefore, it is crucial for organizations to strike a balance between fostering collaboration and providing lead users with the autonomy necessary to drive innovation success.

The significant mediating effect of the number of innovation partners on the relationship between work experience and innovation success suggests that experienced lead users can leverage their expertise better by collaborating with others. As lead users gain more work experience, they are likely to develop a larger network of innovation partners, which enhances their ability to access complementary assets and drives innovation success. This finding extends prior research by demonstrating the mediating role of innovation partnerships in the relationship between individual-level factors (e.g., work experience) and lead user innovation outcomes.

5.4. Practical Implications

The findings of this study provide actionable insights for organizations that aim to foster lead-user innovation and drive innovation success in emerging markets. First, organizations should identify and engage lead users with extensive work experience in relevant domains by leveraging online communities, innovation contests, or referral networks (von Hippel et al., 2009; Smith, 2020). Providing these experienced lead users with resources and support can help organizations tap into valuable sources of innovative ideas and solutions.

Second, fostering collaboration and knowledge-sharing between lead users and innovation partners is crucial. Organizations can create platforms and initiatives that facilitate collaboration and networking among lead users, such as innovation workshops, hackathons, and online collaboration tools (Mahr & Lievens, 2012; Morikawa, 2021). By enabling lead users to connect with potential innovation partners and access complementary resources, organizations can enhance the success of user-driven innovation efforts.

The qualitative findings emphasize the importance of providing lead users with resources, support, and autonomy to engage in innovative activities. Participants highlighted the need for organizations to create an environment that encourages experimentation, risk-taking, and collaboration. This recommendation aligns

with recent research that stresses the importance of fostering an innovation-friendly organizational culture and providing the necessary resources and support (Saldanha et al., 2017; Ochieng & Gichoya, 2021).

Finally, organizations should provide lead users with the autonomy and flexibility to engage in innovative activities while fostering collaboration and knowledge sharing. Organizations can empower lead users to develop novel solutions and drive innovation success by creating an environment that supports experimentation, risk-taking, and creative problem solving (Lilien et al., 2002; Sauermann, 2018). Simultaneously, encouraging collaboration and knowledge sharing among lead users and innovation partners is essential to leveraging the benefits of diverse expertise and resources (Schaarschmidt et al., 2018; Smith, 2020; Morikawa, 2021).

This study contributes to the literature on lead user innovation by investigating the factors driving lead user innovation success in the Kenyan fintech sector. The integration of quantitative and qualitative findings provides a comprehensive understanding of the complex interplay between work experience, autonomy, innovation partners, and innovation success.

5.5. Limitations and Future Research Directions

Although this study makes important contributions to the literature on lead user innovation, it has limitations that should be addressed in future research. The cross-sectional nature of the data limits causal inferences, and the focus on the Kenyan fintech sector may limit the overall generalizability. The qualitative findings reveal the need for further investigation into the optimal balance between autonomy and structure in lead user innovation contexts and the potential differences between incremental and radical innovations.

6. CONCLUSION

This study contributes to the literature on lead user innovation by investigating the factors driving lead user innovation success in the Kenyan fintech sector. Our findings highlight the importance of work experience, autonomy, and innovation partners in driving user innovation success and provide empirical evidence to support the development of targeted strategies for fostering user-driven innovation in emerging markets. By understanding the complex interplay between individual characteristics, collaboration, and innovation outcomes, organizations can more effectively identify, engage, and support lead users in their innovation efforts. Moreover, our study underscores the potential of lead-user innovation to drive inclusive innovation and economic growth in developing countries, highlighting the importance of fostering user-driven innovation in emerging markets.

References

Agarwal, N., Chakrabarti, R., Brem, A., & Bocken, N. (2018). Market driving at Bottom of the Pyramid (BoP): An analysis of social enterprises from the healthcare sector. Journal of Business Research, 86, 234-244.

Amabile, T.M. (1996). Creativity in context: Update to "The Social Psychology of Creativity." Boulder, CO: Westview Press.

Benlian, A., & Hess, T. (2011).

ОСНАЖИВАЊЕ ВОДЕЋИХ КОРИСНИКА: ТРОДЕЛНА ФОРМУЛА КЕНИЈЕ ЗА УСПЕХ ФИНТЕК ИНОВАЦИЈА

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Извод

Концепт иновација које иницирају водећи корисници представља један од суштинских елемената развоја нових производа и тржишног успеха, али карактеристике корисничких иноватора у контексту економија у развоју и даље остају недовољно истражене. Ова студија има за циљ да анализира утицај радног искуства, аутономије и броја иновационих партнера на успех водећих корисничких иновација у финансијско-технолошком (финтек) сектору Кеније. Истраживање се заснива на квантитативним подацима прикупљеним кроз анкету спроведену међу 321 водећим корисничким иноватором, као и на квалитативним налазима добијеним кроз 36 дубинских интервјуа. Резултати анализе указују на значајну улогу радног искуства у подстицању успеха иновација посредством сарадње са иновационим партнерима, као и индиректни утицај радног искуства на успех кроз аутономију, док посредовање партнерстава у овом односу није потврђено. Овом студијом се доприноси академској дискусији о корисничким иновацијама, кроз идентификацију кључних чинилаца који омогућавају успешан развој иновација у контексту земаља у развоју, као и кроз пружање препорука организацијама које настоје да подстакну иновације вођене корисницима. Фокусирањем на финтек сектор Кеније и разматрањем посредничке улоге иновационих партнера, ова студија унапређује постојећу литературу и доприноси дубљем разумевању фактора који утичу на успех водећих корисничких иновација. Уочено је да су радно искуство, аутономија и сарадња са иновационим партнерима кључни предиктори успеха у овом контексту.

Кључне речи: водеће корисничке иновације, радно искуство, аутономија, иновациони партнери, финтек

Opportunities and risks of software-as-a-service: Findings from a survey of IT executives. Decision Support Systems, 52 (1), 232-246.

Bogers, M., Afuah, A., & Bastian, B. (2010). Users as innovators: A review, critique, and future research directions. Journal of Management, 36 (4), 857-875.

Bohnsack, R., & Pinkse, J. (2017). Value propositions for disruptive technologies: Reconfiguration tactics in the case of electric vehicles. California Management Review, 59 (4), 79-96.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative Research in Psychology, 3 (2), 77-101.

Chatterji, A.K., & Fabrizio, K.R. (2014). Using users: When does external knowledge enhance corporate product innovation?. Strategic Management Journal, 35 (10), 1427-1445.

Chirchietti, V. (2021). Inclusive innovation and the role of partnerships: The case of M-Pesa. Industry and Innovation, 28 (6), 743-770.

Cochran, W.G. (1963). Sampling techniques (2nd ed.). New York, NY: John Wiley & Sons.

Creswell, J. W., & Plano Clark, V. L. (2017). Designing and conducting mixed

methods research (3rd ed.). Thousand Oaks, CA: SAGE Publications.

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. Behavior Research Methods, 41 (4), 1149-1160.

Faullant, R., Schwarz, E. J., Krajger, I., & Breitenecker, R.J. (2012). Towards a comprehensive understanding of lead userness: The search for individual creativity. Creativity and Innovation Management, 21 (1), 76-92.

Figueiredo, P.N., & De Pretto, D. (2021). Building innovation capabilities by learning from R&D outsourcing: The 'shadow' effect of absorptive capacity. Technovation, 108, 102324.

Franke, N. & Shah, S. (2003). How communities support innovative activities: Exploration of assistance and sharing among end-users? Research Policy, 32 (1), 157-178.

Franke, N., von Hippel, E., & Schreier, M. (2006). Finding commercially attractive user innovations: A lead user theory test Journal of Product Innovation Management, 23 (4), 301-315.

Green, S.B. (1991). How many subjects do it take to perform regression analysis? Multivariate Behavioral Research 26 (3), 499-510.

Griffin, A. and Page, A.L. (1996). PDMA success measurement project: Recommended measures for product development success and failure. Journal of Product Innovation Management, 13 (6), 478-496.

Hani, U., Arya, R., & Gupta, V. (2022). Innovation in emerging markets: A systematic review and future research agenda. Journal of Business Research 139, 1141-1159.

Herstatt, C., & von Hippel, E. (1992). From experience: Developing new product concepts via the lead user method: A case study in a "low-tech" field. Journal of Product Innovation Management, 9 (3), 213-221.

Hienerth, C. & Lettl, C. (2017). Perspective: Understanding the nature and measurement of the lead user construct. Journal of Product Innovation Management, 34 (1), 3-12.

Hyysalo, S. (2009). User innovation and everyday practices: Micro-innovation in sports industry development. R&D Management, 39 (3), 247-258.

Lettl, C., Herstatt, C., Gemuenden, H.G. (2006). User contributions to radical innovation: Evidence from four cases in the medical equipment technology field R&D Management, 36 (3), 251-272.

Lilien, G.L., Morrison, P.D., Searls, K., Sonnack, M., & von Hippel, E. (2002). Performance assessment of the lead user idea-generation process for new product development. Management Science, 48 (8), 1042-1059.

Mahr, D., & Lievens, A. (2012). Virtual lead user communities: Drivers of knowledge creation for innovation. Research Policy 41 (1), 167-177.

Mihajlovic, I., Perišić, M., Spasojević - Brkić, V., Milošević, I., & Milijić, N. (2024). Digitalization of Strategic Decision-Making in Manufacturing SMEs: A Quantitative SWOT-TOWS Analysis. Precision Mechanics & Digital Fabrication 1 (3), 176 - 188.

Morikawa, M. (2021). Innovation in the service sector and the role of patents and trade secrets: Evidence from Japanese firms. Journal of the Japanese and International Economies 59:101112.

Ndung'u, N., & Signé, L. (2020). The

Fourth Industrial Revolution and digitization will transform Africa into a global powerhouse. Foresight Africa 2020, 61-73.

Ochieng, H. & Gichoya, D. (2021). Determinants of successful public sector information system implementation in Kenya: A case study. Electronic Journal of Information Systems in Developing Countries 87 (5): e12176.

Onsongo, E. (2019). Institutional entrepreneurship and social innovation at the base of the pyramid: The case of M-Pesa in Kenya. Industry and Innovation, 26 (4), 369-390.

Pohjosenperä, T., Kekkonen, P., Pekkarinen, S., & Juga, J. (2019). Service modularity in managing healthcare logistics. The International Journal of Logistics Management, 30 (1), 174-194.

Ramdani, B., Binsaif, A., Boukrami, E. (2019). Business model innovation: A review and research agenda. New England Journal of Entrepreneurship, 22 (2), 89-108.

Saldanha, T.J., Mithas, S., Krishnan, M.S. (2017). Leveraging customer involvement in fueling innovation: The role of relational and analytical information processing capabilities. MIS Quarterly 41 (1), 267-286.

Sauermann, H. (2018). Fire in the belly? Employee motives and innovative performance in startups versus established firms. Strategic Entrepreneurship Journal 12 (4), 423-454.

Schaarschmidt, M., Walsh, G., Evanschitzky, H. (2018). Customer interaction and innovation in hybrid offerings: Investigating moderation and mediation effects for goods and services innovation. Journal of Service Research 21 (1), 119-134.

Schreier, M., & Prügl, R. (2008). Extending lead-user theory: Antecedents and consequences of consumers' lead userness.

Journal of Product Innovation Management, 25 (4), 331-346.

Schuhmacher, M.C., & S. Kuester, (2012). Identification of lead user characteristics driving the quality of service innovation ideas. Creativity and Innovation Management 21 (4), 427-442.

Schweisfurth, T.G., Dharmawan, M.P. (2019). Does lead usage foster the implementation and diffusion of ideas? Study on Internal shop floor users. Research Policy, 48 (1), 289-297.

Schweisfurth, T.G., & Raasch, C. (2015). Embedded lead users: Benefits of employing users for corporate innovation. Research Policy 44 (1), 168-180.

Seo, H., Chung, Y., & Yoon, H.D. (2022). R&D team autonomy and innovation performance: Moderating the role of internal and external collaboration. Journal of Business Research, 139, 629-640.

Shin, N., Kraemer, K.L., Dedrick, J. (2020). R&D and firm performance in the semiconductor industry. Industry and Innovation, 27 (3), 302-323.

Smith, A. (2020). Inclusive innovation and the role of intermediaries: Insights from Kenya's 'Silicon Savannah. ' Journal of International Development, 32 (6), 780-803.

Spreitzer, G.M. (1995). Psychological empowerment in the workplace: Dimensions, measurement, and validation. Academy of Management Journal, 38 (5), 1442-1465.

Stock, R.M., von Hippel, E., & Gillert, N.L. (2016). The impact of personality traits on consumer innovation success. Research Policy 45 (4), 757-769.

von Hippel, E. (1986). Lead users: A source of novel product concepts. Management Science, 32 (7), 791-805.

von Hippel, E. (2005). Democratizing innovation. Cambridge, MA: MIT Press.

von Hippel, E., Franke, N., & Prügl, R. (2009). "Pyramiding: Efficient search for rare subjects." Research Policy 38 (9), 1397-1406.

Zhu, H., Gardner, D. G., and Chen, H. (2018). Relationships between work team climate, individual motivation, and creativity. Journal of Management 44 (5), 2094-2115.