

Contesting the underperformance of women businesses: Entrepreneurship digitalisation – the way to go

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Abstract: Digitalisation is an emerging trend influencing enterprises in developing nations to adapt and improve entrepreneurial performance. The purpose of the study is to establish the relationship between entrepreneurship digitalisation and the performance of women businesses in an emerging economy. A quantitative research study was conducted in Mashonaland West province in Zimbabwe. Data were collected through structured questionnaires from 312 women entrepreneurs in various sectors of the economy using a self-administered structured questionnaire. Respondents were randomly sampled, and data were analysed using Structural equation modelling in Amos V21. The study found a strong correlation between women's entrepreneurial performance and the performance expectation of digital technologies. The results also indicate that women's entrepreneurship performance is positively impacted by the effort expectations of digital technologies. Additionally, the findings of the study suggest that entrepreneurs' age has a moderating effect on the relationship between entrepreneurship digitalisation and women entrepreneurship performance.

Keywords: entrepreneurship digitalisation, women businesses, Zimbabwe

1. Introduction

In order to survive and thrive, digitalisation is an emerging trend influencing enterprises to adapt and improve digital capabilities in every aspect (Bokhari, 2022; Miceli et al., 2021). Businesses can use digitalisation to effectively adapt to business demands and overcome uncertainty (Alsufyani & Gill, 2022). Digital technology has changed both the internal and external components of an organisation (Bokhari & Awuni, 2023) and their interactions, as noted by Jiang et al. (2020). This can have a direct or indirect effect on the results of enterprise performance (Li et al., 2020). The unpredictable effects of digitalisation on the performance of entrepreneurship put decision-makers in a difficult situation where they must decide whether to invest and forecast the desired results for performance (Kaondera et al., 2023). Though researchers and practitioners are paying more and more attention to how digitalisation affects performance outcomes (Imran et al., 2021), it is unclear how digitalisation benefits women-owned enterprises.

Block et al. (2016) opined that female entrepreneurs represent one of the groups of people who are emerging as entrepreneurs the quickest in the globe and have the potential to significantly impact innovation, employment, and wealth creation in all economies. They also provide a solution to the unemployment crisis plaguing some economies in the form of self-employment (D'Andrea, 2023). Nonetheless, women's empowerment inside the primary entrepreneurial ecosystems remains limited to both developed and developing nations, with the percentage of female start-ups never surpassing 18% (Tiba & Frikha, 2020). It makes sense that women's lack of participation in GDP development results in a loss of competitiveness as well as wealth (Bylund et al., 2023), particularly in a knowledge economy where entrepreneurial capital is becoming a more valuable resource for a nation's development (Behr & Storr, 2022; Januškaitė & Užienė, 2018). The fact that the amount of business done by women is on par with that of males in the majority of developed economies – if not in all of them – is another intriguing factor that highlights the contribution that women

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can make to a knowledge economy. Additionally, this trend has expanded in fields of study such as science, technology, engineering, and mathematics (STEM), which has historically been associated with men (Makarem & Wang, 2020).

Chirumalla (2021) purported that digital technologies can serve as the foundation for dynamic capabilities, which allow businesses to reinvent their business models by swapping out antiquated organizational procedures for fresh, creative ones. Productivity and stock price losses during the pandemic were much smaller in skill-intensive companies that could embrace remote work technologies, reflecting these prospective advantages in efficiency and competitiveness (Bartik et al., 2020). Furthermore, by enhancing workers' autonomy and flexibility, digital technologies – like those that facilitate remote work – can raise worker motivation and job satisfaction (Belitski et al., 2022). Additionally, by reaching new customer segments through affordable product delivery, e-commerce can aid market expansion (Brem et al., 2021). For women entrepreneurs, who usually face severe market access and financial restrictions, the benefits from enhanced market access and customer interaction could be particularly substantial (Dabić et al., 2020).

However, there are discernible gender disparities in the ways that enterprises implement digital technologies (Saccardo et al., 2018). Variations in digital technology capabilities and complementary resources, both at the firm and geographic levels, might help explain some of the marginal productivity of new digital technologies and the adjustment cost of fast adopting them (Akpan et al., 2020). Zimbabwean women entrepreneurs have low levels of digital readiness due to their inadequate knowledge and abilities in digital technology (Moyo, 2020), which restricts their capacity to facilitate e-commerce and remote work (Dabić et al., 2020). Zimbabwean women experience conflicting opinions on the transparency and accountability of digital technology, as well as interaction breakdowns with certain users, design-reality gaps concerning network access, and the implementation of digital technology policies (Ncube et al., 2023).

While several developing nations have undertaken educational programmes aimed at reducing or eliminating entrepreneurial failure, these efforts have yielded no real improvements. Digitalisation appears to be a response to this disappointing outcome. Important connections have been noted in the literature between business education and entrepreneurial activity, as well as between education, firm development, and entrepreneurial performance (Boldureanu et al., 2020). The underperformance of female-managed or female-owned firms in underdeveloped nations like Zimbabwe is documented in a modest but well-organized body of literature (Campos & Gassier, 2017). The results of Mawonedzo et al. (2021) and Boldureanu et al. (2020) are generally negative, showing that women perform noticeably lower than men. This general rule does include certain outliers, but they are usually industry-specific (Amin & Islam, 2014). However, from a conceptual-theoretical standpoint, variations in firm performance based on the gender of the management or owner are caused by consistently different decisions made by men and women. According to Saccardo et al. (2018), women are often far less inclined than men to participate in competitive behaviour, which could have an impact on how well their businesses function. Nonetheless, these disparities in decision-making could be attributed to the limits that separate men and women, which restrict the options available to female managers in terms of investments, risk-taking, and competitive behaviour (Vurayai, 2022). The literature has identified a number of these barriers. These include: female entrepreneurs' underinvestment because they must support their families (Chikh-Amnache & Mekhzoumi (2024), their struggles to raise capital, their inability to leverage family business networks (Vurayai, 2022), the fact that investors treat women differently (Mawonedzo et al., 2021), or their lower educational attainment (Islam et al., 2019). Ncube et al. (2023) and Vurayai (2021) concur that women have more severe barriers when it comes to using digital technology across various platforms. Vieitez-Cerdeño et al. (2023), Fanaja et al. (2023) and Chirumalla (2021) did not offer insightful reading on the most effective ways for African entrepreneurs, especially Zimbabwean, women to combat underperformance in the corporate world through digital entrepreneurship.

In Zimbabwe, women entrepreneurs are not performing as expected due to challenges that include absence of digitalisation (Gaura et al., 2021; Chikazhe et al., 2023; Manyanga et al., 2023). As such, business is lost as face-to-face transactions are not possible due to distance and costs involved in travelling. Most customers are not aware of some women entrepreneurs due to absence of online adverts. The majority of women entrepreneurs are face to face business whilst most customers can conduct online business transactions. If this

situation is not improved, most women entrepreneurial businesses are bound to collapse. In an effort to address similar problems, several studies have been conducted elsewhere (Ncube et al., 2023; Miceli et al., 2021; Vurayai, 2021). The majority of these studies were conducted in developed nations and they did not focus on entrepreneurship digitalisation as a driver for women entrepreneurship. Thus, the lack of knowledge in this field relates to how digitalisation of businesses affects the performance of women entrepreneurs especially in developing nations like Zimbabwe. By demonstrating the moderating role of entrepreneurs' age on the entrepreneurship digitalisation-women entrepreneurship relationship, this study aims to add to the body of knowledge on women entrepreneurship performance. In an effort to achieve this, the current study seeks to the answer these questions:

RQ1: How do performance expectancy, effort expectancy, social influence and facilitating conditions influence entrepreneurship digitalisation?

RQ2: How does entrepreneurship digitalisation affect women business enhancement?

RQ3: Does entrepreneurs' age play a moderating role in the relationship between entrepreneurship digitalisation and women business enhancement?

2. Literature review

2.1. Theoretical underpinnings

According to Venkatesh et al.'s (2003) Unified Theory of Acceptance and Use of Technology (UTAUT), the primary determinants of user adoption are performance expectancy, effort expectancy, social influence, and facilitating conditions. Performance expectancy is comparable to perceived utility and relative advantage among them. Effort expectation and perceived complexity are comparable. Subjective norms are analogous to social influence. UTAUT has been utilised since its creation to explain user adoption of a range of information technologies, such as Internet banking, mobile banking, and mobile technologies (Bhatiasevi, 2016). UTAUT contributes to the research by understanding multiple factors related to venture creation. It incorporates the functions of perceived utility and usability, as well as the importance of outside factors like social influence in influencing attitudes. People will use digital technology with the attitude and intention that come with having these items (UTAUT). Nevertheless, the existence of these variables is insufficient as, given individual differences, the view of women entrepreneurs may vary based on age.

2.2. Female business underperformance

Recent studies show that female-owned firms contribute considerably to the economy as their relative importance has increased in the recent decades (Grekou et al., 2023; Sui et al., 2022). As a result, women who invest in their futures support economic vitality and prosperity globally. The literature shows that, in spite of these advancements, female-owned businesses are typically marginal and smaller than male-owned businesses, with less of an emphasis on expansion (Robichaud et al., 2013). Meanwhile, it is observed that the so-called 'female underperformance hypothesis' proposed by Quagraine (2016) is linked to women-owned firms. The gender underperformance hypothesis was further reinforced by Farhat and Mijid (2018), who discovered that female-owned businesses perform worse and are more likely to fail than male-owned businesses.

According to Marlow and McAdam (2013), women's risk aversion or their inability to accumulate sufficient amounts of entrepreneurial capital to take full advantage of opportunities to expand their businesses are the likely causes of these performance inadequacies. Sui et al. (2022) found there are a number of factors that may account for the underperformance of female-owned businesses. Specifically, female entrepreneurs tend to prioritize goals related to juggling work and home obligations, rather than extrinsic objectives. According to Robichaud et al. (2015), female business owners were more frequently expected to maintain their social role within the home in addition to running a business, whereas male business owners were taking their spouse's assistance with household duties for granted. As a result, female entrepreneurs lost out on the opportunity to grow their company through marketing and strategy development and were left with less time to devote to marriage. This may also

influence the network view a greater percentage of female entrepreneurs adopt, as they must turn to other means of survival to keep their businesses alive. It would imply that networking is more of a requirement for women than a natural method of conducting business. As a result, this underperformance issue can be resolved with targeted assistance and guidance, thereby enabling women to meet the performance expectations established by their male colleagues (Quagraine, 2016). This study suggests that digitalisation of female businesses could be a means of addressing women-owned enterprises' underperformance. Entrepreneurship digitalisation will help females in business to manage costs efficiently, enhance productivity, engage customers, easy accessibility, disaster recovery, increased revenue, better decision-making, enhanced information preservation, better resource management, faster time to market and integration.

2.3. Performance expectancy

Huang (2020) observed that performance expectancy (PE) and perceived usefulness (PU) are synonymous. Huang (2020) defines PE as the expected improvement in performance that an individual expects to achieve through the usage of a technology. Venkatesh et al. (2003) defined performance expectancy as a degree to which a person expects that utilizing a system will enable them to improve their job performance. The theoretical roots of performance expectancy and how it differs from goal commitment have been discussed in a recent work (DeShon & Landis, 1997). Five aspects come together to generate performance expectancy: task fit (personal computer usage model), perceived ease of use (technology acceptance model), external incentive (motivational model), and relative advantage (innovation diffusion theory) as well as outcome expectancy (social cognition theory), according to Venkatesh and Davis (2000). Venkatesh et al. (2003) define performance expectancy as the extent to which a person believes that using the system would help them improve job performance. In the individual TAM, this construct is thought to be the best at predicting purpose (Venkatesh & Davis, 2000). The current study viewed performance expectancy as the degree to which women entrepreneurs confirm that using the system would help them improve their businesses' performance. Women entrepreneur's acceptance of the intention to reach performance standards or objectives is therefore referred to as performance expectancy.

2.4. Effort expectancy

Effort expectancy (EE) is a system's deployment-related relieving level. According to UTAUT, effort expectancy is the system's level of user-friendliness. According to Venkatesh et al. (2003), the Technology Acceptance Model's (TAM) perceived ease of use element is where the effort expectancy factor originates. This Model takes into account things like perceived complexity and simplicity of usage. According to Davis (1989, p.320), perceived ease of use refers to "the extent to which an individual believes that utilising a specific system would require no effort". Effort expectation is the measure of how easy and usable a certain information system is for users (Venkatesh et al., 2003). The degree to which people expect technology to eliminate the need for mental and physical effort is shown by their effort expectancy. The idea behind effort expectancy is that there are relationships between the amount of effort put in at work, the outcomes achieved, and the advantages realised (Huang, 2020). Effort expectancy can be characterized in terms of ease, or the degree to which a person feels comfortable using technology and the ease with which they do so. Effort expectancy impacts overall use intention: the perceptions of these antecedents vary significantly between potential versus early users (Alsufyani & Gill, 2022). In the present study, effort expectancy is operationalised as the perceived ease of use and comfort of digital technology services used by women in business. Effort expectancy is defined as the degree of ease related to women in business adaptation to digital technology. Digital technology selection by women in business is influenced by their everyday usage patterns, which can be categorised as easy or challenging.

2.4 Social influence

The extent to which a user feels that important people value technology use is known as social influence (Venkatesh & Davis, 2000). According to Venkatesh et al. (2003), social influence is the extent to which someone's decision to utilise a new system will be influenced by the beliefs of others, including family, friends, peers, and others, whether those beliefs are good or negative. This bears similarities to the definition of the subjective norm factor in the Technology of Acceptance Model (TAM) 2 – a TAM extension. Social influence was defined by DeShon and Landis (1997) as the extent to which a person's position within their social group is thought to be improved by utilising a technological innovation. Social influence encompasses both deliberate and inadvertent endeavours to modify the convictions, dispositions, or conduct of an individual. Obedience, compliance, persuasion, social loafing, social facilitation, deindividuation, observer impact, bystander effect, and peer pressure are just a few examples of the diverse ways that social influence manifests itself. Venkatesh and Davis (2000) discovered that social impact plays a significant role in the explanation of technology use. Women, for example, are more cognizant of social impact while utilising new technology since they are more receptive to other people's opinions (Venkatesh, 2000). According to Abu-Al-Aish and Love (2013), behavioural intention to use online learning is highly impacted by social influence. For example, the belief of the community, family, in-laws, and husbands on the significance of mobile technologies in schooling might have an impact on a woman's intention to use digital technology at the workplace.

2.5 Facilitating conditions

Venkatesh et al. (2003, p.453) viewed supporting conditions (also known as facilitating conditions) as the "degree to which an individual believes an organizational and technical infrastructure exists to support use of the system". The degree to which a subject feel that an organizational and technological infrastructure exists to support the use of the system is known as facilitating conditions (FC). Organizational support for technology users that can affect how a system is used is known as a facilitating condition (Huang, 2020). It is the extent to which users think there is an organizational and technical infrastructure to enable the use of information technology, according to Venkatesh et al. (2003).

Facilitating conditions is defined as the extent to which businesswomen perceive the availability and existence of ICT infrastructure, institutional policy, technical support, and enthusiastic leadership to facilitate the adoption of technology in their enterprises. The construct is known as perceived behavioural control in various acceptance models (TPB/DTPB, C-TAM-TPB), and compatibility in IDT (Huang, 2020). "The degree to which use of the innovation is perceived as being voluntary, or of free will" is the definition of voluntarism of use (Moore & Benbast, 1991, p.195). The degree to which prospective adopters believe the adoption choice is voluntary is known as voluntariness (Huang, 2020). The present study defines facilitating conditions as women's perceptions of the resources and support available to perform a behaviour.

2.5 Entrepreneurship digitalisation

The process of developing and exploiting entrepreneurial possibilities utilizing technology platforms and other information-communication technologies is known as digitalisation of entrepreneurship (Block et al., 2016; O'Reilly, 2022). Digital entrepreneurship is defined as "the reconciliation of traditional entrepreneurship with the new way of creating and doing business in the digital era", according to Boldureanu et al. (2020, p.1). It is a subset of entrepreneurship when all, or most, of the physical components of a conventional organization have been replaced with digital ones (Grimm & Bock, 2022). Digital entrepreneurship, according to Dabić et al. (2020), is the invention of new digital technologies and/or innovative applications of such technologies that result in the launch of new companies and the transformation of already-existing ones. As per the present investigation, digitalisation of entrepreneurship pertains to the utilization of digital instruments, assets, and frameworks for the purposes of data creation, retention, and administration. Because of this, female entrepreneurs connect online with stakeholders and customers using gadgets like laptops, tablets, and Android smartphones.

2.6 Research hypothesis development

Prior research from various domains of human endeavour have given performance expectancy great attention (Alsufyani & Gill, 2022; Grimm, 2019; Miceli et al., 2021). Wong et al. (2013) states that performance expectations relate to what extent instructors and students think using interactive whiteboards will help them with teaching and learning. DeShon and Landis (1997) found performance expectations to have a significant impact on the role that privacy plays in the adoption of healthcare information systems. Performance Expectancy is a measure of the perceived value of utilizing mobile internet. Previous studies have also found that satisfaction and the need to continue are impacted by perceived usefulness, which is comparable to performance expectancy (Huang, 2020). It has also been noted that performance expectations have an impact on the adoption and use of information systems. Findings by Alalwan et al. (2017) confirms that performance expectancy is seen as a useful phrase that arises when using online banking. Performance expectancy has been shown by several studies to have a major impact on users' behavioural intention to utilise internet banking (Alalwan et al., 2017; Venkatesh et al., 2003). In the light of reported evidence, the following hypothesis is proposed:

H1: Performance expectancy will predict entrepreneurship digitalisation.

Users are more likely to use a system if it requires less work on their part. Ghani (2018) established a substantial correlation between effort expectancy and user intention to use internet banking. According to Davis (1989), a programme that users believe to be simpler to use is more likely to be accepted. Similar results were found by Davis et al. (1989), who predicted that effort-oriented constructs would be more prominent in the early phases of a new habit when process difficulties represent obstacles to be overcome and eventually fade into instrumentality concerns. This agrees with earlier research by Davis et al. (1989) and Venkatesh and Davis (2000). Huang (2020) found that the intention to use digital technology is significantly predicted by both performance expectancy and effort expectancy. Previous studies have demonstrated the impact of effort expectancy on user satisfaction and continuous usage (Alalwan et al., 2017; Rahi & Abd. Ghani, 2018). As a result, those who are at the least experienced acceptance stage establish a connection between performance outcomes and the amount of effort required to use the technology. Thus, there was formerly a correlation between performance and effort. It is crucial to take this relationship into account since new technologies, when user experience is at its lowest, are the primary focus of technology acceptability. Venkatesh and Davis (2000) state that even following a new system's initial experience users' judgments of a product's utility in subsequent usage will still be influenced by what ease of use they initially associated with it. Internet users' effort expectancy will raise their performance expectancy when it comes to embracing the technology (Bhatiasevi, 2016). This suggested that user performance is impacted by technology usability. Other studies have demonstrated that effort expectancy has a major impact on technology users' performance expectancies (Alsufyani & Gill, 2022). Consequently, researchers hypothesized that user effort expectancy will have a considerable impact on user performance expectancy, as attested by previous literature (Huang, 2020; Rahi & Abd. Ghani, 2018). Thus, the hypothesis:

H2: Effort expectancy will predict entrepreneurship digitalisation.

The degree at which a person is under societal pressure to accept new technology is known as social influence (Chirumalla, 2021; Martins et al., 2014). Martins et al. (2014) state that users' intentions to use online banking services will be positively impacted by social influence. Prior research has demonstrated the important impact of social influence on individuals who utilize online banking (Chirumalla, 2021; Martins et al., 2014). According to Martins et al. (2022), social influence measures how referees' opinions affect the conduct of specific users. The social influence theory states that people often follow the advice of other significant referees (Bagozzi & Lee, 2002). Therefore, when significant others advise a user to use mobile Internet, the user may heed their advice. Additionally, Martins et al. (2022) discovered that the intention of users to continue using mobile data services is significantly influenced by social influence. The impact that significant referents can have opinions, either

positive or negative, on the intention decisions of potential adopters brings attention to the potential importance and utility of new technologies. Important social friends' recommendations on whether or not to utilize new or less experienced technology typically refers to the anticipated performance gains from using the technology in question. Studies by Bhatiasevi (2016), Alsufyani and Gill (2022), and Märtins et al. (2022) demonstrated the significance of social impact in the adoption and use of e-government, finding that if significant individuals (family, friends, peers, and so on) had a positive influence, businesswomen would be highly inclined to utilise digital technology. According to the TAM2 theory developed by Davis et al. (1989), subjective norm and image are the two factors that determine perceived utility and serve as a proxy for social influence processes (Venkatesh & Davis, 2000). Via internalization and identification processes, the social impact, in turn, favourably affects perceived utility (Venkatesh & Davis, 2000; Huang, 2020). Against this background, it can be hypothesized that:

H3: Social influence will predict entrepreneurship digitalisation.

It is hypothesized that supportive conditions have a major impact on usage behaviour (Venkatesh et al., 2003). According to Venkatesh et al. (2008), the other variables are in competition with the facilitating conditions to determine the actual usage behaviour. The resources available for using an information system help identify its usage patterns. Adequate resources facilitate the adoption of new technical systems (Alsufyani & Gill, 2022). This affects not just new users but even seasoned users in the way they use technology. A positive and substantial association was found between the two factors in the studies by Venkatesh and Davis (2000) and Alalwan et al. (2017). This explained that the atmosphere produced inside an organizational framework for technology uptake offers a proxy with direct control over how users behave. When users possess the tools and information required to use mobile Internet, they are said to be in facilitating conditions. The costs of utilizing mobile Internet, including communication and service fees, are the responsibility of the user. Furthermore, they must possess the essential skills to utilize mobile Internet, which is a new technology. Users may stop using mobile Internet if they do not have access to these tools and expertise (Venkatesh et al. (2008). Findings have indicated that users lacking operational skills are less inclined to adopt information technology (Alalwan et al., 2017). According to earlier study on the adoption of Internet banking (Joines et al., 2003; Märtins et al., 2022), researchers hypothesized that users' intentions to use online banking are significantly influenced by facilitating conditions. Following above arguments, facilitating condition is outlined as:

H4: Facilitating conditions will predict entrepreneurship digitalisation.

Age has been shown to positively influence the adoption of digital technology in those previous studies that claim a positive relationship between the four constructs of performance expectancy, effort expectancy, social influence, and facilitating conditions (Venkatesh et al., 2003; Bhatiasevi, 2016; Huang, 2020). Fanaja et al., 2023; Tam & Oliveira (2017). Laukkanen et al. (2007) examined the relationship among age, performance expectancy, and effort expectancy, and found positive relationship between age and intention to use digital technology.

H5: Entrepreneurship digitalisation will predict women businesses' performance.

The age of users has an important effect on their behaviour (Fanaja et al., 2023). While some studies (Joines et al., 2003) found no relationship at all, or a negative relationship, between respondents' age and the likelihood of using digital technology, other studies (Dabholkar et al., 2003) found a positive relationship between the two variables. According to research by Laukkanen et al. (2007), older people are less likely to embrace change and have a negative attitude toward using mobile banking services. Laukkanen et al.'s (2007) studies reveal that the elderly had increased resistance to change and negative attitudes toward adopting mobile banking services. In contrast to Laukkanen et al. (2007), who discovered that the majority of mobile banking users were middle-aged or older and that the majority of electronic banking users were middle-aged or older, Tam and Oliveira (2017) found that respondents who were 50 years of age or older were the most eager to use mobile banking

services (see also Alalwan et al., 2017). Furthermore, after conducting street interviews with 300 respondents in six major Chinese cities at random, Laforet and Li (2005) found that the majority of mobile banking users were not always young and well-educated. In a similar vein, Püschel et al. (2010) found that the average age of mobile banking users was below 30. Determining the moderating influence of age is necessary in the light of the contradictory results mentioned above. Following the discussion, it was therefore hypothesised that:

H6: Women entrepreneurs' age has a moderating effect on entrepreneurship digitalisation and women businesses' performance.

The research model, suggested hypotheses, and the connection between the four components of entrepreneurship digitalisation for women businesses' performance are shown in Figure 1.

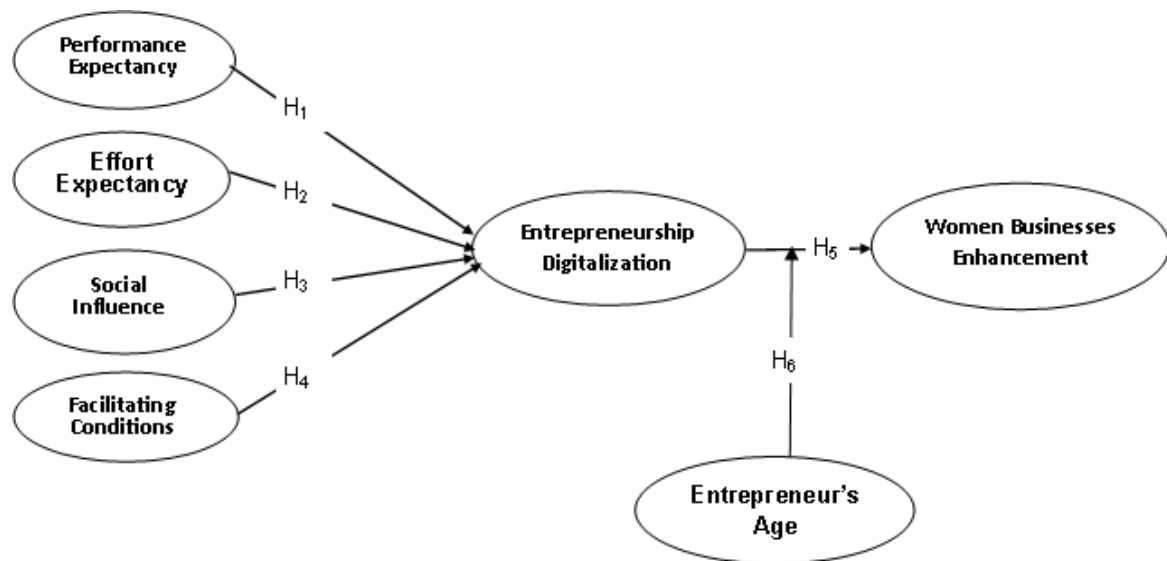


Figure 1. Conceptual framework. *Source: Authors' own*

3. Research Methodology

This study adopted a positivism philosophy. Positivism was used as it relies on the hypothetico-deductive method to verify a priori hypotheses that are often stated quantitatively, where functional relationships can be derived between causal and explanatory factors (independent variables) and outcomes (dependent variables) (Park et al., 2020). It was decided to use a cross-sectional survey because it provides an assessment of exposure and outcome in a sample of the population at a certain moment in time (Rahi & Abd. Ghani, 2018). The research was conducted from 2023 to 2024. Participants in the study were female business owners in Mashonaland West, Zimbabwe. The province was selected because it embodies nearly every business endeavour carried out in other Zimbabwean provinces, making it a true representative of the nation's other regions. Retail, manufacturing, services, processing, farming, and digital technology were the industries represented by the responders. The population is comprised of females in business. The total number of the population was not known due to the fact that most women businesses operating in Zimbabwe are not registered and they operate informally. Therefore, the Raosoft calculator for the unknown population was used to determine the sample size to arrive at 377. The sample size also corresponds to related research by Alalwan et al. (2017) and Rahi and Abd. Ghani (2018), which employed 62, 343 and 398 participants, respectively, as samples. Because sample sizes for comparable studies on women's entrepreneurship performance fall into the same range, the researcher concluded that using a sample size of 377 was appropriate. Convenience sampling was used to select respondents since some of the women in businesses were scattered and not reachable by the time of study. Primary data were

gathered using a standardized questionnaire with a five-point Likert scale. The responders used a Likert scale ranging from 1 being strongly disagree and 5 being highly agree. The Likert scale ranged from 1-strongly disagree to 5-strongly agree and the respondents were asked to show their response by the use of a tick or a visible mark.

4. Findings

4.1. Sample

Data on women's entrepreneurship performance through digitalisation were gathered from women entrepreneurs in the Zimbabwean province of Mashonaland West. A total of 377 female entrepreneurs were given paper-based surveys. Ninety-six percent (96%) of the surveys that were distributed were found to be usable upon return. According to the findings, the majority of female entrepreneurs (39%) were between the ages of 50 and 59, with 23% falling between the 40 and 49 age range. Of the female entrepreneurs, just 2.4% claimed to be under 30 years old, and 14.1% to be between 30 and 39. It is inferred that women become more active entrepreneurs as they age, as evidenced by the fact that 97.5% of the women were 30 years of age or older. It was found that, in their late thirties, women frequently begin to consider launching a business. There could be a number of reasons for this including childcare, involvement in other employment, needing to take care of an extended family, and lack of support from family. 56% of Mashonaland West's female entrepreneurs are widows. 38% of the female entrepreneurs who disclosed that they are married came after this group. Merely 6% of the female entrepreneurs reported being unmarried. This suggests that women who become widows have a tendency to be more active entrepreneurs than they were when they were single or married. In contrast, Makarem and Wang (2020) found that the majority of participants in the survey were married.

Finally, 52.6% of the respondents had qualification levels below a diploma. 8.7% of them held degrees, while another 36.6% of them said they had completed a diploma programme. Merely 2.2% of them possessed a master's degree. It is possible to infer that a sizable portion of Mashonaland West's female entrepreneurs have completed their elementary schooling.

4.2. Convergent validity test results

Convergent validity was assessed using a variety of metrics, including model fit indices, composite reliability, standardised factor loadings, individual item reliabilities (squared multiple correlations), crucial ratios, and average variance extracted (AVE). Table 1 displays the constructs, standardised factor loadings, and critical ratios.

Table 1. Constructs, standardised factor loadings and critical ratios. *Source: Authors' own*

Construct	Items	Standardised Factor Loadings	Critical Ratios
Performance expectancy	PEED1	.689	-
	PEED2	.766	22.240***
	PEED3	.787	28.536***
	PEED4	.639	20.301***
	PEED5	.669	21.899***
	PEED6	.871	24.874***
	PEED7	.649	20.870***
Effort expectancy	EEED1	.731	-
	EEED2	.951	37.301***
	EEED3	.950	39.502***

	EEED4	.952	38.363***
	EEED5	.930	37.122***
	EEED6	.979	39.893***
Social influence	SIED1	.750	-
	SIED2	.839	20.897***
	SIED3	.909	20.877***
	SIED4	.868	20.896***
	SIED5	.767	20.9885***
Facilitating conditions	FCED1	.733	-
	FCED2	.951	37.019***
	FCED3	.953	39.321***
	FCED4	.945	38.302***
	FCED5	.931	37.009***
	FCED6	.979	39.876***
Entrepreneurship digitalisation	WBED1	.719	-
	WBED2	.835	25.498***
	WBED3	.959	37.602***
	WBED4	.809	25.304***
	WBED5	.760	20.576***
	WBED6	.811	20.374***
	WBED7	.862	22.201***

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.
 Rotation converged in 21 iterations.
 Total variance explicated 74.76%

Note: - CR is fixed; *** $p < 0.001$

Standardized factor loadings and critical ratios were found to be acceptable in Table 1, and the total variance explained was significantly higher than the conventional limit of 60% proposed by Platin and Ergun (2017). Convergent validity was therefore attained.

The χ^2 / DF -2.001, Goodness of Fit Index-0.945, Adjusted Goodness of Fit Index-0.914, Normed Fit Index-0.933, Tucker-Lewis Index-0.947, Comparative Fit Index-0.961, and root mean square error of approximation (RMSEA)-0.036 were deemed acceptable measurement model fit indices. If the model is to be approved, χ^2/DF should be less than 3, Goodness of Fit Index, Adjusted Goodness of Fit Index, Normed Fit Index, Tucker-Lewis Index, Comparative Fit Index should be near to 1, and RMSEA should be less than 0.07 (Reisinger & Mavondo, 2007). Reisinger and Mavondo (2007) state that all composite reliabilities for all constructs were above the minimum cut-off point of 0.7, and all individual item reliabilities were above the minimum cut-off point of 0.5. All standardised factor loadings for all items were more than the minimal cut-off value of 0.6, which was considered significant at $p < 0.001$ (Segar, 1997). According to Segar (1997), every critical ratio for the items was significant at $p < 0.001$ and sufficiently substantial. Table 1 illustrates that all AVEs for the constructions were higher above the minimal cut-off point of 0.5 (Fornell & Larcker, 1981).

4.3. Discriminant validity

To assess discriminant validity, AVEs and squared inter-construct correlations (SICs) were examined. Table 2 displays the discriminant validity results.

Table 2. Mean (M), standard deviation (SD), AVE and SICC. Source: Authors' own

Construct	M	SD	PEED	EEED	SIED	FCED	WBED	EAED
Performance expectancy (PEED)	4.45	4.65	.597					
Effort expectancy (EEED)	4.87	4.78	.272	.701				
Social influence (SIED)	4.67	4.69	.308	.335	.634			
Facilitating conditions (FCED)	4.88	4.85	.225	.401	.307	.642		
Business enhancement (WBED)	4.60	4.49	.197	.423	.258	.287	.654	
Entrepreneurs' Age (EAED)	4.87	4.77	.354	.201	.301	.305	.258	.587

Note: Diagonal elements in bold represent AVEs

The results in Table 2 show that discriminant validity results were acceptable. In comparison to AVEs, comparable SICs were smaller (Fornell & Larcker, 1981; Segars, 1997).

4.4. Testing research hypotheses

To evaluate the structural links suggested in Figure 1, structural equation modelling (SEM) was completed in AMOS V22. With $\chi^2/DF=1.874$; GFI=0.944; AGFI=0.951; NFI=0.924; TLI=0.937; CFI=0.942; RMSEA=0.040, the structural model shows a satisfactory match. The results of the hypothesis test are shown in Table 3.

Table 3. Hypotheses testing results. Source: Authors' own

Hypothesis	Hypothesised Relationship	SRW	CR	Remark
H ₁	Performance Expectancy → Women Business Enhancement	.314	13.147***	Supported
H ₂	Effort Expectancy → Women Business Enhancement	.293	11.479***	Supported
H ₃	Social Influence → Women Business Enhancement	.341	15.463***	Supported
H ₄	Facilitating Conditions → Women Business Enhancement	.269	11.118***	Supported
H ₅	Entrepreneurship digitalisation → Women Business Enhancement	.360	17.006***	Supported

Notes: SRW standardised regression weight, CR critical ratio, *** significant at $p < 0.001$.

Table 3 presents result that support H1-H5. The findings in Table 3 demonstrate that performance expectancy, effort expectancy, social influence and facilitating conditions all have a direct and favourable impact on women's digital entrepreneurship. H1-H5 were therefore supported. Also, the findings suggest that digitalisation of entrepreneurship goes beyond expanding business presence or standing out from the competition. In times of disruption such as during the pandemic, digitalisation enabled businesses to stay connected to customers and continue to offer their services uninterrupted. Female businesses, especially, those that had digitally transformed themselves, survived and thrived pivoting on technology.

4.5. Results for the moderation effect of age

As referred to in the sixth hypothesis, H6: Entrepreneurs' age plays a moderating role on the relationship between entrepreneurship digitalisation and women entrepreneurship performance. Table 4 shows the results for the moderation effect of age.

Table 4. Coefficients of moderated regression model. Source: Authors' own

Variable	Beta	t	p
Entrepreneurship digitalisation	.406	3.110	.000
Age	.416	3.112	.000
Entrepreneurship digitalisation × Age	.534	4.456	.000

As shown in Table 4, H6 was tested using a moderated regression analysis. As for H6, coefficient for the interaction terms (Entrepreneurship digitalisation × Age) (Beta .534, t-value 4.456) were significant ($p < 0.001$). This suggests that age moderates the effect of entrepreneurship digitalisation on women entrepreneurship performance. Thus, H6 was supported.

5. Discussion

The findings of the study have theoretical, practical and future research implications. Studies that have investigated the influence of entrepreneurship digitalisation on women entrepreneurship performance in an emerging economy like Zimbabwe are scarce. This study was conducted to enhance the understanding the inclusion of digitalisation in women entrepreneurship businesses. The study sought to determine the effects of performance expectancy of technology, effort expectancy of use of technology, social influence of technology and facilitating conditions of technology as determinants of entrepreneurship digitalisation. The study findings indicate that all performance expectancy of technology, effort expectancy of the use of technology, social influence of technology and facilitating conditions of technology positively influence entrepreneurship digitalisation. The findings are supported by related studies conducted across the globe (Abu-Al-Aish & Love, 2013; Alsufyani & Gill, 2022; Dabić et al., 2020; Grimm & Bock, 2022; Huang, 2020; Venkatesh et al., 2003). This implies that cost efficiency, increased productivity, engaging customers, easy accessibility, disaster recovery, increased revenue, better decision-making, enhanced information preservation, better resource management, faster time to market and integration are important aspects.

These results indicate that women's entrepreneurship performance is positively impacted by the effort expectations of digital technologies. This means that how women entrepreneurs digitalize their businesses depends on how they view digital technology, which is corroborated by research by Chikazhe et al. (2023) and Alalwan et al. (2017). Also, the current study's findings provide enough data to support the societal influence of digital technology on women's entrepreneurship performance. Thus, social influence of digital technology has an impact on women entrepreneurs' performance. The findings complement other research in the field that examined how digitalisation affects overall business performance (Alsufyani & Gill, 2022). The fact that every research hypothesis was validated implies that digitalisation of entrepreneurship is essential to the success of women entrepreneurs, particularly in developing nations such as Zimbabwe.

The study found a strong correlation between entrepreneurship digitalisation and women's business performance. Therefore, advancements in digital technology lead to better outcomes for women who pursue business. The results also suggest that women entrepreneurs may digitalize their businesses provided digital technology is straightforward to use and user-friendly. The study's findings support those of other relevant studies by Rahi and Abd. Ghani (2018) and Makarem and Wang (2020), who examined variables influencing business performance.

Moreover, the findings of this study suggest that entrepreneurs' age has a moderating effect on the relationship between entrepreneurship digitalisation and women

entrepreneurship performance. These results are similar to the findings of Laukkanen et al. (2007) and Alalwan et al. (2017), who have established that the age of users has an important effect on their behaviour. The plausible explanation of the present finding is that women entrepreneurs' age plays a positive role in entrepreneurship digitalisation and women entrepreneurship performance.

5.1. Practical implications

The current results indicate that there is need for embracing digital technology devices (cell phones, tablets) and to link with customers in the case of women entrepreneurship businesses. It is therefore encouraged that women entrepreneurs adopt digitalisation and communicate with customers to produce a wide range of customised products to suit customer needs. The adoption and implementation of digitalisation allows increased administrative and managerial commitment among women entrepreneurs. Digitalised businesses can easily collaborate with customers and speed up communication and this also encourages versatile working. Through entrepreneurship digitalisation, customer feedback can be improved, and this results in improved customer service, loyalty and satisfaction. The adoption of digital technology can increase commercial and technical information knowledge-sharing with customers, which could result in increased business performance.

6. Conclusions and recommendations

The results add to the theoretical body of evidence supporting the gendered nature of the adoption process of digital technology. The results also have implications for expanding digital technology resources and offer suggestions for improving business owners' capacities. In particular, the study has shown how businesswomen use digital technologies. 377 female respondents' responses indicated the necessity for digital technology adoption in their companies.

Since the sample was limited to Zimbabwean women in business, it could not be broadly applied. The approach can be tested for additional emerging economies in future studies. Another constraint is the convenience sampling method used, as some women entrepreneurs in areas which are not easily accessible might have been missed out. On the other hand, it is proposed that the theoretical framework and research findings could be utilized to support further investigations into the experiences of people in emerging nations and other demographics with digital entrepreneurship.

This study is one of the few that has the audacity to look at the effect of digitalisation on entrepreneurship performance in a setting like Zimbabwe. One of Zimbabwe's provinces, Mashonaland West, was the site of the study. The findings' generalisability is hampered by this backdrop. As a result, further research of this kind ought to be carried out in the future in different regions of the globe.

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