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INFORMATION SYSTEMS RESOURCES, COMPETITIVE ADVANTAGE AND ZIMBABWE'S FIRM PERFORMANCE: AN INTEGRATION OF THE RESOURCE-BASED VIEW AND THE DYNAMIC CAPABILITIES VIEW OF THE FIRM

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Abstract

In many developing countries, information commutation technologies (ICT) resources and capabilities are no longer perceived as business assets but as means for achieving sustainable competitive advantage and superior firm performance. In particular, ICTs support a firm's core competencies and enable firms to exploit market opportunities, neutralise competitive threats, reduce costs and increase performance. The study uses the dynamic capabilities theory and the resource-based view to illustrate how a firm's ICT resources may support and develop its core competencies. The study employed a cross-sectional case study design where data was collected using a structured questionnaire administered to a stratified sample of 983 respondents. Structured equation models (SEM) were used to analyse quantitative data for the disaggregated test model. Our findings reveal that ICT resources are required, but not sufficient, to achieve competitive advantage and increase a firm's performance. ICT-enabled core competencies and tacit, path-dependent, firm-specific ICT management capacities explain variation in business performance. ICT can improve company performance if capabilities focus on creating distinctive core competencies. The study recommends strategies that enable firms to build human capital to develop innovative processes. Such strategies might help minimise switching costs, boost complementarities between business practices and ICT usage, streamline business processes, and improve managerial decisions and dynamic organisational

structure. This study found that educating ICT managers maximises ICT investment. The study's contribution is using SEM to explain factors that determine competitive advantage and firm performance. Management must capitalise on aggregate demand-generating operations, including ICT infrastructure development, proprietary value-adding core activities, and networking with various vital alliances. The study adds resource-based ideas to Zimbabwe's empirical literature, unlike previous studies that only used innovation adoption theories. This study's test model could examine industry levels in dynamic, competitive markets.
Keywords: Zimbabwe Firms, ICT, Competitive Advantage, firm Performance

INTRODUCTION

The ultimate question facing firms operating in the Schumpeterian world of information communication technology-based competition is how to achieve superior operational and financial performance by leveraging sustainable competitive advantages. In the past, enterprises in developing nations were sheltered from the Schumpeterian world of increasing intensity of performance rivalry, creative destruction of existing competencies, and innovation-based competitiveness. However, with increasing global integration due to the general use of information communication technology, the business environment has shifted from stability to turbulence. Firms are now focusing on how to develop firm-level specific capabilities and competencies to respond to business vicissitudes and idiosyncratic shifts in the macro-environment. Critical issues are linked to the firm's business processes and systems, market competitive positions and business expansion paths. Numerous researchers provide concrete evidence on how a firm can develop its information system (IS) capability to adapt, align and take advantage of a rapidly changing business environment (Pezeshkan et al., 2016; Fainshmidt et al., 2016; Ambrosini & Altintas, 2019).

In contrast to the seminal study by Porter (1980), Cool and Schendel (1988) and Wemerfelt (1989) suggest the significance of firm-level specific factors such as the use of information technology and the relative unimportance of industry effects on firm performance. Firms operating in Zimbabwe lack the organisational capacity to develop new competencies quickly. Barney (1986), who came up with the firm's resource-based view (RBV), argued that unless a firm is fortunate and possesses superior information, the price it pays in a competitive factor market will capitalise the rents from the asset. Why is this study critical? First, firms can accumulate a large stock of valuable information technology assets and still not have many functional capabilities. The perspective that competitive advantage and firm performance require both the exploitation of existing internal and external firm-specific capabilities is an area

that has received deep interrogation in literature focusing on developing countries (see Teece, 1982; Wernerfelt, 1984). We argue that combining appropriate complementary assets can improve a firm's ICT support for core competencies. The degree to which ICT supports core competence is distinctive and largely depends on how firms are relative to their competitors and how hard it is for these competitors to replicate their competencies. This paper contributes to the literature on high, pointing out that competitive advantage and superior firm performances require constant market surveillance and technologies and willingness to adopt best practices that allow ICT to support a firm's core competence.

Studies focusing on ICT support for core competencies in developing countries are still embryonic. Second, most studies that examine ICT support for core competencies have relied on the RBV. This paper departs from this approach by using integrating the RBV and dynamic capabilities, given that each of these theories has received a lot of criticism in literature (Barney & Arikan, 2001; Peteraf & Barney, 2003; Almarri & Gardiner, 2014; Othman et al., 2015; Nason & Wiklund, 2018). Penrose (1959), the originator of the RBV, questioned the applicability of theory to modern economic society. According to Kamasak (2017), the RBV does not adequately explain how intangible resources provide the firm with a competitive advantage. Barney and Arikan (2001) contend that it is not always the case that firms with valuable resources will obtain superior performance. They observe that valuable resources are not the only factors needed for firms to grow.

Therefore, the RBV is an incomplete theory requiring integration with other approaches, such as dynamic capabilities, to bring out the effect of ICT support for core competencies. Hoopes et al. (2003) also observed that RBV must be considered part of a more extensive theory and not singularly. In addition, Singh et al. (2022) argued that integrating RBV and the firm's dynamic capability permits a multi-theoretical approach since the RBV can not explain firm performance alone. Both the RBV and dynamic capabilities of the firm focus on the internal workings of a firm only and ignore more abstract internal and external factors, such as ICT support for core competence, to combine exterior concepts with intangible resources.

We argue that since the RBV and dynamic capability theories are different, we suggest combining the two to benefit from their shortcomings makes sense. In addition, this may allow the incorporation of intangible resources such as ICT support for core competence in supporting competitive advantage and firm performance. This paper aims to integrate the RBV and dynamic capabilities model into a holistic and dynamic growth framework to analyse the nexus among ICT support for core competencies, competitive advantage and firm performance in Zimbabwe. The paper outline is as follows: Part one covers the introduction and background, Part 2 presents the theoretical and empirical literature review, Part three covers the

methodology section, and Part four covers the findings. Part five presents recommendations and implications from the study.

THEORETICAL AND EMPIRICAL LITERATURE REVIEW

Theories of strategy have undergone significant evolution. However, Porter's (1980) competitive forces approach remains the dominant paradigm that explains competitive advantage and firm performance. Porter's (1980) theory is rooted in the structure-conduct-performance paradigm and emphasises a firm's actions to create defensible positions against competitive forces. According to Porter (1980), the industry structure strongly influences the game's competition rules and the potential strategies available to firms. The strategic conflict approach associated with Shapiro (1989) is the second approach to achieving competitive advantage and leveraging firm performance. This strategic management paradigm focuses on product market imperfections, strategic interaction and entry deterrence (Yu et al., 2014). The strategic conflict approach uses the tools of game theory (Claver-Cartes et al., 2012). This paradigm also views competitive outcome as a product of the effectiveness with which firms keep their rivals off balance through strategic information system investments, increasing production capacity, signalling, pricing strategies and the control of information (Iruthayasamy, 2021; Mikalef &Pateli, 2017; Ferreira et al., 2020; Barney & Hesterly, 2019; Anning-Dorson, 2018).

Thompson et al. (2015) concur that the primary key to a firm's success and future development depends on its ability to find or create a competence that is really and truly distinctive. A well-known strategic paradigm is the resource-based view of the firm (Teece et al., 1997; Teece, 2014). This approach views firms with superior systems and structures as having outstanding performance due to their ability to lower costs and achieve high-quality or product performance (Zakrzewska-Bielawska, 2016; Farhanghi et al., 2012). Unlike Porter (1980a), that focuses on product market position and Shapiro (1989), who emphasises the importance of economic profits, the central focus of the RBV is on the gains accruing to owners of scarce firm-specific resources (Barney, 1997; Barney, 2001; Barney et al., 2011). In addition, the RBV says that achieving sustainable competitive advantage depends on upstream product markets and rents on the firm's idiosyncratic and difficult-to-imitate resources (Flynn & Flynn, 2004). The final paradigm is dynamic capabilities (see Teece et al., 1987).

The firm's strategic goal is to develop and deploy a combination of valuable and rare resources that competitors cannot imitate, substitute or directly purchase (Barney et al., 2011; Barney & Mackey, 2016: Chavez et al., 2017). According to Chang et al. (2012), if this objective obtains, a firm's performance advantages are subsequently built and sustained over a long time

leading to superior performance over key competitors (Chavez et al., 2017: Chahal & Bakshi, 2015). Researchers should directly investigate the resource base of a firm and not the structural characteristics of its industry (Hintehuber, 2013). Firms that possess valuable and rare resources attain a competitive advantage and enjoy an enhanced performance in the short run (Barney, 1991). However, to sustain competitive advantages over time, organisational resources must also be inimitable and non-substitutable (Dierickx & Cool, 1989; Jacobsen, 2013; Pan et al., 2015).

Nevertheless, other researchers argue that resources do not necessarily need to be rare but can be ordinary and still provide firms with competitive advantages (Asharaf & Mueller, 2015; Barbosa et al., 2013; Bozic & Dimovksi, 2019; Zakrzewska-Bielawska, 2016). The firm is a bundle of productive resources combined to create different goods for sale (Barney, 1997). The resource combination makes a firm unique and able to achieve a competitive advantage in the industry (Bozic & Dimovski, 2019; Fairhangh et al., 2012). A firm's development is ongoing (Barbosa et al., 2013). Internal limits on firm performance arise from unused resources (Chahal & Bakshi, 2015), lack of managerial familiarity (Pan et al., 2015; Peteraf et al., 2013), lack of specialised knowledge in information systems (Ashraf & Mueller, 2016; Nason et al., 2012). With the emergence of a knowledge-based economy, ICT resources have increasingly become a source of competitive advantage (Muzurura, 2016)

This approach argues that firms that win in the global marketplace must demonstrate timely responsiveness and rapid and flexible product innovation (Jacobsen, 2013). Furthermore, dynamic capabilities say that firms that achieve competitive advantage must have management capability to effectively coordinate and redeploy internal and external competencies (Pan et al., 2015). Dynamic is a term that refers to the capacity to renew competencies to achieve congruence with the changing business environment (Teece et al., 1997). Dynamic capabilities reflect an organisation's ability to acquire new innovative forms of the competitive advantage given path dependences and market positions (Leonard- Barton, 1992). The term "capabilities" emphasises the critical role of strategic management in appropriately adapting, integrating, and reconfiguring internal and external organisational skills, resources and functional competencies to match the requirements of a changing environment (Swanson & Droege, 2016). Specific innovative responses are needed when time-to-market and timing are critical, the rate of technological change is rapid, and the nature of future competition and markets are hard to determine (Barney & Hesterly, 2019).

In contrast, capabilities can be described as the 'know-how' for a bunch of resources to collectively perform some task or activity (Barney & Hesterly, 2019). Ferreira et al. (2020) argue that when a firm has a good capability, it stands that if a company has a good capability, it

increases its core competencies that have the potential to exploit market opportunities. Hamel and Prahalad (1994) say the term core competence refers to the collective learning in the firm, particularly hot to coordinate diverse production skills and integrate multiple streams of technologies. Hamel (1994) categorised a firm's core competence into four; market access, integrity-related and functional-related core competencies.

ICT support for core competencies benefits firms, such as reducing operational costs (Pezeshkan et al., 2016; Fainshmidt et al., 2016) and increasing outsourcing capabilities (Barney & Hesterly, 2019; Asri, 2019; Khan et al., 2018). However, Pratama et al. (2019) argue that competitive advantages play a mediating role in improving firm performance. Many researchers say that the RBV is a static theory and fails to explain how firms' resources and capabilities translate to competitive advantage (Ashrafi & Mueller, 2015; Altintas, 2019). According to the "dynamic resource-based view", resources alone cannot help companies obtain competitive advantages (Ridge et al., 2014). On the contrary, the firms must constantly synthesise, reorganise and transform the resource combinations (Salazar, 2014). This continuous state of change suggests that the RBV requires blending with other theories, particularly the dynamic capabilities theory that explains the role of ICT in increasingly changing business environments (Ambrosini & Altintas, 2019).

The RBV The resource-based view adopts two significant assumptions that help adequately analyse the sources of competitive advantage within a given company (Day & Jean-Denis, 2016). Firstly, the approach undertakes the assumption regarding the heterogeneity of a company concerning the evaluation of the competitive advantage (Hinterhuber, 2013). The model considers that firms may be heterogeneous based on the resources they control within a given industry (Drahokoupil, 2014). This view means that a company's competitive advantage needs monitoring and evaluation concerning the bundle of resources they contain in operations (Chang et al., 2012; Barney, 1991; Amit & Schoemaker, 1993). In other words, organisations need to adapt to change, develop new competitive advantages and enhance their strategic position compared to their competitors (Rothaermel, 2015; Grant, 1991).

There has been a significant shift in the relevant literature over the past decades regarding the factors that predict variations in business performance (Hoopes et al., 2003; Furrer et al., 2008). The factors range from industry-specific to firm-specific (Barbosa et al., 2013; Hoopes et al., 2003; Lazzarotti et al., 2011). For example, using a cross-section of Turkish manufacturing firms, Bayraktar et al. (2017) interrogated the relationship between business strategy, innovation and firm performance. They found that firm-specific factors mediated the impact of cost-leadership and differentiation on organisational performance (Barbosa et al., 2013). Similar conclusions by Hernández-Perlines et al. (2016) concur. Other

business strategy researchers use factors such as contingency and co-alignment to describe the fit between strategy and ICT support for core competence (Lee, 2012; Lennartz et al., 2012; Ralston et al., 2015). Firms develop sustainable advantages when they build unique sets of resources and organisational capabilities that are valuable, rare, imperfectly imitable, and non-substitutable (Singh et al., 2022). From an RBV perspective, information systems resources that are inimitable and valuable can be rent-yielding (Penrose, 1959; Wernerfelt, 1984; Rockart and Short, 1990). Investing in ICT is not a necessary and sufficient condition for improving firm performance (Chang et al., 2012). Firms must embed ICT resources and capabilities in products and services, streamlined business processes, improved decisions, and dynamic organisational structures, which can affect firm performance (Yu et al., 2014; Thompson et al., 2015).

Ravichandran and Lertwongsatien (1997) acknowledged two critical information system dimensions: transformational competence. This dimension represents transformational competence, which means the ability to transform the organisation using ICT, and operational competence, which represents the ability to provide reliable and consistent ICT support to the business. They argued that these IS competencies are likely to affect firm performance directly. Clemons and Row (1991) observed that ICT provides a sustainable competitive advantage, mainly if used to leverage structural differences between firms, such as the degree of diversification and vertical integration. IS resources/capabilities are likely to affect firm performance only when deployed to create unique complementarities with other firm resources (Chahal & Bakshi, 2015; Chavez et al., 2017). Using ICT to enhance core competencies requires that firms make choices about how technology resources are deployed, taking into account the strategic thrusts of the organisation (Porter, 1980a). IS facilitates planning, a necessary process that enables organisations to identify business priorities and ensure that IS goals and initiatives align with business priorities (Barney et al., 2011; Barbossa et al., 2013).

Thus, this study adopts a resource-based dynamic capabilities complementarity framework since dynamic capabilities (DC) arose from a significant flaw in the resource-based view of the firm (Barney, 1996; Teece et al., 1997; Eisenhardt & Martin, 2000). The RBV has been criticised for "presuming" the existence of resource limitations. This view on RBV does not consider the production of resources, their integration, or their release. Dynamic methods may fill such voids. Using dynamic resources protects an organisation's assets against ever-shifting market circumstances. DC creates and replenishes resources, whereas RBV chooses which ones to use. Thus, capabilities, absorptive capacity, environmental turbulence, and adaptability influence sustainable competitive advantage, the DC perspective's primary dependent construct (Cohen & Levinthal, 1990; Barney, 1996; Teece et al., 1997; Eisenhardt & Martin, 2000).

RESEARCH METHODOLOGY

Research design

ICT researchers favour quantitative methods, particularly surveys (Bharadwaj et al., 2007; Ravichandran & Lertwongsatien, 2005). Surveys are valuable for social and behavioural study when a researcher cannot organise some behaviours of interest in a realistic situation (Leedy & Ormrod, 2015). Using quantitative methodologies and a cross-sectional design, we analysed Harare's formally incorporated enterprises' ICT support for the firm's competencies. The sample size was estimated using a confidence level of 95% and an error margin of 5%. Saunders et al. (2015) say that these percentages suit social scientists. Managers of qualifying Harare-based businesses were the research population.

Sampling technique

The sample size of an unknown population was determined using probability-based stratified sampling for the online survey. This selection criterion is due to: first, to maximise the statistical efficiency of the sample, and second, to offer sufficient data for studying the various population subgroups (Cooper & Schindler, 2001). Due to the COVID-19 pandemic, it was necessary to question 2,415 managers electronically. This study collected 2,134 out of 2,415 quantitative survey instruments, yielding an 88% response rate, exceeding both expectations and sample sizes. However, 1151 people were excluded for various reasons, including missing data and failing to meet study requirements. Thus, the analysis and outcomes of this study come from 983 responses. This response rate is similar to other studies (see Kufandirimbwa et al. (2012) study's utilisation of 777 respondents out of 2,534); a high response rate of 88% suggests that our findings are generalisable (see Akram et al., 2017; Hair et al., 2017). This judicious selection permits us to investigate ICT management's crucial skills' effect on business performance. Harare-based companies serve eleven of Zimbabwe's most critical industrial sectors and are thus a strong proxy for the general appreciation of managerial ICT competencies on operational business performance. Dillon et al. (1993) found that questionnaires may efficiently and affordably collect essential data from dispersed groups. This survey gathered perception-based data on three ICT resources and capabilities constructs: management competencies support, competitive advantage, and firm performance. Respondents were guaranteed anonymity because it decreased interviewer bias (Hooper, 2006).

Study Instrument and data collection

Competencies afforded by ICT and competitive advantages are crucial independent variables. The ICT support for competencies comprises six elements, one modified from Ray et

al. (2005) and five from Ravichandran and Lertwongsatien (2005). The competitive edge indicators were twelve. Ray et al. (2005) contributed five variables, Vargas et al. (2003) contributed two, Jeffers (2003) contributed two, Ravichandran and Lertwongsatien (2005) contributed three, and Ray et al. (2005) contributed two (2005). Eight firm performance measures include operational and financial performance (Ray et al., 2005; Ravichandran & Lertwongsatien, 2005). Parasuraman et al. (1985) created these strategies for the marketing industry. However, other scholars have since implemented them in different organisational contexts other researchers have followed this approach (Dzindikwa & Kabanda, 2022; Dzindikwa, 2021; Elrehail, 2018; Akbar & Parvez, 2009; Ray et al., 2005; Ravichandran & Lertwongsatien, 2005). This study modified the eight items proposed by Ray et al. The factors were measured using a 5-point Likert scale.

To establish the construct validity of the study's instrument, we made significant modifications to successful surveys that had previously studied comparable components. Following Cooper and Schindler's (2001) methodology, we tested the questionnaire with eight ICT practitioners and a statistics professor to ensure its content validity. They guarantee that research instruments are reliable. Field (2016) and Hair et al. (2018) accept consistency ratings with Cronbach's alpha (CA) values of 0.7 or higher. CA values above 0.70 imply that the data collection instrument used by a subset of Harare business management personnel is dependable.

Data Analysis

The research used data from an online questionnaire sent to managers representing Harare companies. The statistical analysis used IBM SPSS AMOS v21 and structural equation modelling (SEM) to diagnose the study model and determine the dataset's structure. Since regression cannot detect measurement errors and inflate results, it is not appropriate to analyse this study's statistical data (Raykov & Traynor, 2016). Due to its capacity to evaluate correlations between variables, SEM is suitable. SEM compares hypotheses to data through the use of covariance matrices. SEM involves model formulation, identification, estimation, model fit evaluation, model modification, and results reporting (Muzurura, 2022; Dzindikwa & Kabanda, 2022; Elrehail, 2018). This AMOS data analysis took fifteen (15) iterations to achieve model minimisation. Before testing hypotheses, researchers employed confirmatory factor analysis (CFA). CFA determined the variables' structure, characteristics, convergent, discriminant, and construct validity. SEM helped to identify relevant associations in this cross-sectional investigation that included mediation (Elrehail, 2018; Hair et al., 2018). SEM facilitates the evaluation of sophisticated models, especially those that contain mediators or moderators.

Similar research employed this method (Muzurura, 2022; Dzindikwa & Kabanda, 2022; Dzindikwa, 2021; Elrehail, 2018; Makanyeza et al., 2016).

Hypotheses Development

Following a seminal study by Ravichandran and Lertwongsatien's (2005) idea on resource complementarities, the paper proposes a research model that interrelates three concepts of ICT support for core competencies. These concepts are ICT support for core competence, sustainable competitive advantages and firm performance. We suggest that a sustainable competitive edge depends on robust ICT support for core competence, which influences a firm's performance, as shown in Figure 1 below. Furthermore, we postulate that a firm's ability to create a competitive advantage using ICT is a function of its ability to use IT to develop and enhance its core competencies.

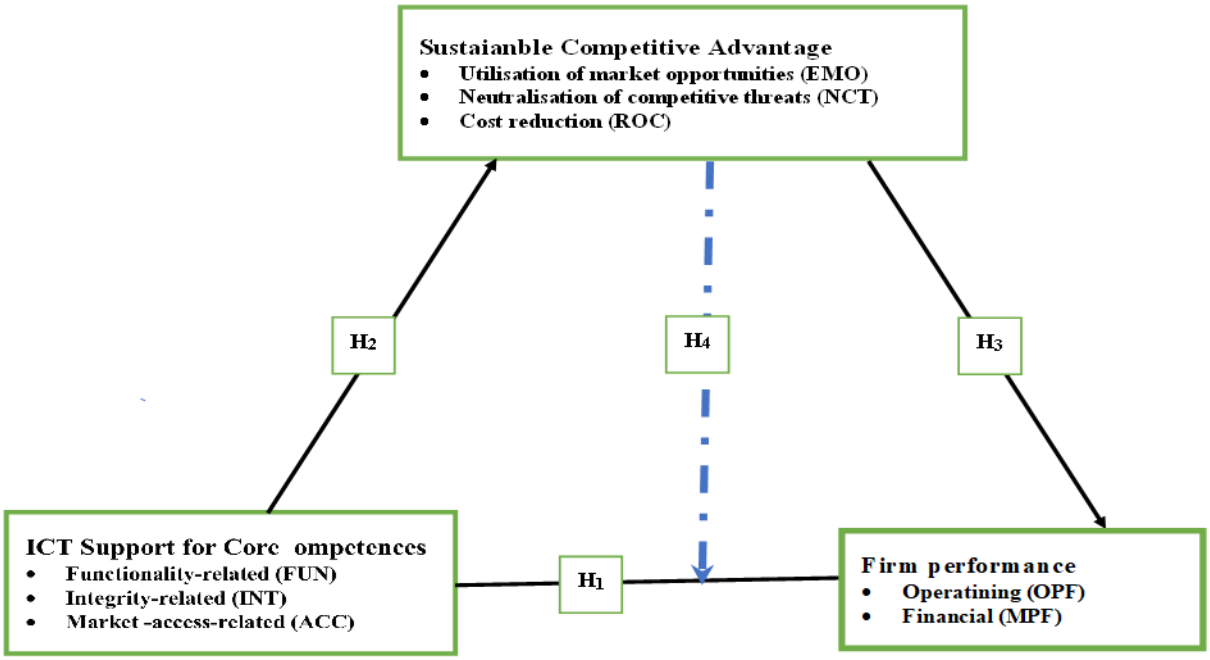

Figure 1: The Research Test Model

Firm performance

Firm performance is measured using two perspectives; operational performance and financial performance (Selvam et al., 2016; Lee et al., 2016: Kirrane et al., 2017; Shafiee, 2021; Soebroto & Budiyanto, 2021). However, operational performance's impact has also been inconclusive (see Azim et al., 2015; Tsikriktsis, 2007) further argue that individual factors such as ICT awareness also moderate the relationships. We propose the following hypotheses:

H_1: There is a positive relationship between ICT support for core competencies and firm performance.

$H_{1.1}$: There is a positive and significant relationship between ICT support for core competencies and operating performance.

$H_{1.2}$: There is a positive and significant relationship between ICT support for core competencies and financial performance.

ICT support for Core competencies

Core competencies are the collection of manufacturing abilities and technology that enable a company to provide a specific client value. According to Prahalad and Hamel (1990), customers gain from the competencies and technology that support competitiveness. Moreover, Kay (1994) suggests that reputation, architecture, and innovative capability are three essential characteristics that complement one another. Reputation enables an organisation to convey positive information about itself to its stakeholders, facilitating market-access concerns. The architecture is structurally or functionally related to the network of relationships, contracts, and alliances. At the same time, an innovative capability is an ability to conduct completely new projects that exceed the current strategies, implying intellectual capital or integrity-related difficulties. This study concurs with many studies that argue that core competencies like market access, functional related and integrity-related competencies are the basis for firms to compete in the market (Hamel, 1994).

Core competencies have three groups: market access, integrity-related, and functionality-related (Hamel, 1994; Lynch & Baines, 2004). Market access includes competencies that permit firms to close to their customers, effectively identify market needs, and rapidly respond to shifting customer preferences, tastes and needs (Konthong et al., 2016; Sigalas et al., 2013). Market-access competencies include efficient customer segmentation, product and market positioning and matching the firm's capabilities with customer demands (Fuentelsaz et al., 2015). On the other hand, integrity-related competencies allow firms to offer quality products at competitive prices due to the ability to streamline supply value chains, reengineer business processes, and supply products just in time (Wang & Ahmed, 2007). Functionality-related competencies rely on product research and development and technological innovativeness to deliver unique products and services at the best customer value (Chahal & Bakshi, 2015). Embedding ICT support for core competence to improve competitive advantage and leverage firm performance can result in high rent yielding provided the IS resources are inimitable and non-substitutable and complementary to other factors of production (Gareche et

al., 2016; Sołoducho-Pelc, 2014). From the above discussions, the following primary and secondary hypotheses:

H_2: There is a positive and significant relationship between ICT support for core and competitive advantage.

The following sub-hypotheses from the main hypotheses above;

$H_{2.1}$: ICT support for core competencies is positively and significantly related to exploiting market opportunities.

$H_{2.2}$: ICT support for core competencies is positively and significantly related to neutralising competitive threats.

$H_{2.3}$: ICT support for core competencies is positively and significantly related to reducing costs.

Competitive Advantage on Firm Performance

The term competitive advantage refers long-term benefits of implementing business strategies that create unique product offerings resulting in improved firm performance (Sigalas, 2015: Tanwar, 2013; Herrera, 2015). ICT support for core competence is a significant channel for leveraging competitive advantages. Firms can use ICT systems to mitigate competitive threats, reduce operational costs, and revamp value chains to create distinctive competencies. Hence, we posit the hypotheses:

H_3: There is a positive relationship between competitive advantage and firm performance.

$H_{3.1}$: Utilising market opportunities have a positive effect on firm performance.

$H_{3.2}$: Neutralising competitive threats positively and significantly impacts firm performance.

$H_{3.3}$: Strategies that reduce costs positively affect firm performance.

Several studies also show that competitive advantage mediates firm performance (Sucuahi & Cambarihan, 2016; Wang et al., 2016; Baker et al., 2017; Kamukama, 2013; Jardon & Martos, 2012). For this reason, we propose the following additional hypotheses:

H_4: Competitive advantages positively affect firm performance.

$H_{4.1}$: Competitive advantage mediates the relationship between ICT support for core competencies and operating performance.

$H_{4.2}$: Competitive advantage mediates the relationship between ICT support for core competencies and financial performance.

ANALYSIS AND FINDINGS

Following a seminal study by Ravichandran and Lertwongsatien (2005), structural equation modelling tests the research model that included five latent constructs. The formative constructs are; ICT support for integrity-related competency (INT), ICT support for market

access competency, ICT support for functionality competency (FUN), ICT support for neutralising competitive threats (NTC), firm performance (MFP) and ICT support for reducing operational costs (ROC). Market-based performance (MP) and operational performance were formative indicators for a firm's performance. INT, NTC, INT, ROC, and FUN were used for ICT support for core competency.

Measurement

The common factor analysis (CFA) assesses the measurement model, convergence and discriminant reliability and validity (see Fornell & Larcker, 1981; Tabachnick & Fidell, 2013). As shown in table 1, the thresholds composite reliability (CR) and Cronbach alpha were all greater than 0.70 for all constructs, and the average variance extracted (AVE) for all variables was more significant than 0.50 (Srinivasan et al., 2002; Tabachnick & Fidell, 2013; Hair et al., 2017; Muzurura, 2022). Hence the findings indicate acceptable convergent reliability.

Table 1: Descriptive Statistics, Validity and Reliability

Research construct	Descriptive statistics		CA	*CR*	*AVE*
	M	*SD*			
PLAN	3.14	0.86	0.82	0.87	0.52
STRA	3.23	0.86	0.82	0.88	0.50
CADV	3.33	0.87	0.74	0.84	0.51
ACC	2.94	0.85	0.78	0.86	0.60
FUN	2.87	0.84	0.93	0.94	0.57
INT	2.77	0.85	0.93	0.94	0.56
ING	2.73	0.87	0.91	0.93	0.52
MAT	3.22	0.88	0.88	0.93	0.50
OPF	3.27	0.93	0.70	0.82	0.53
MPF	3.24	0.90	0.84	0.92	0.50
EMO	3.22	0.89	0.88	0.93	0.51
NCT	2.77	0.85	0.94	0.95	0.55
ROC	2.87	0.84	0.90	0.92	0.60

Multicollinearity Test

Following studies by Gefan and Straub (2005), discriminant validity measures are at the construct level. The initial step was to compare the relationship between the square root of the AVE of each construct and the correlations among the constructs (Bryne, 2016; Hair et al., 2017). As shown in Table 2, the square roots of the AVE are above the corrections among variables, indicating acceptable discriminant validity. The second step was analysing the cross-loading values of other latent variables. According to our results, all of the item loadings of the

associated variables are higher than the cross-loading values of other latent variables. This result demonstrates that there is considerable discriminant validity. The multicollinearity test uses variance-inflation factors (VIFs) as well as the tolerance values of the predictor values. Our findings show that VIFs values are below ten or tolerance values are above 0.1, thus showing no multicollinearity among the variables (see Mason & Perreault, 1991; Hair et al., 2014). In addition, VIFs scores range from 1.60 to 2.50, showing that multicollinearity was not an issue in this study.

Table 2: Multicollinearity and Average Variance Extraction

Construct Items	Cronbach's Alpha	Composite Reliability	AVE	OPF	MPF	FUN	INT	ACC	EMO	NCT	ROC
OPF	0.70	0.82	0.53	***0.73***							
MPF	0.84	0.92	0.50	0.66	***0.71***						
FUN	0.93	0.94	0.57	0.20	0.44	***0.75***					
INT	0.93	0.94	0.56	0.43	0.51	0.69	***0.75***				
ACC	0.78	0.86	0.60	0.60	0.40	0.65	0.71	***0.77***			
EMO	0.88	0.93	0.51	0.73	0.46	0.42	0.22	0.35	***0.74***		
NCT	0.94	0.95	0.55	0.55	0.48	0.35	0.60	0.22	0.50	***0.71***	
ROC	0.90	0.92	0.60	0.46	0.20	0.52	0.44	0.53	0.66	0.45	***0.77***

Model fitness diagnostic tests

Several fitness tests to assess the model's goodness-of-fit are GFI, TLI, CFI, NFI, RMR and RMSEA. As shown in Table 3 below, goodness-of-fit indices met the recommended thresholds (see Hair et al., 2014; Khalid & Hunira, 2015; Gaskin & Lim, 2016).

Table 3: Model Fitness Tests

Model Fitness Test	Model fitness Index	Recommended Thresholds	Actual Findings
Absolute Fit	RMR	< .05	0.012
	RMSEA	≤ .08	0.007
Incremental Fit	GFI	≥ .90	0.970
	TLI	≥ .90	0.998
	CFI	≥ .90	0.998
	NFI	≥ .90	0.971
Parsimonious Fit	PCMIN/DF	≤ 3	1.080
Significance test	P-value	>0.05	0.021

Structural Model

Our findings from the disaggregated regression model reveal that functionality-related competencies (FUN), operational performance (OPF), integrity-related performance (INT), ability to neutralise competitive threats (NTC), market access-related competencies (ACC) and reducing operating costs (ROC) are positively related to firm performance, confirming all hypotheses from H1 to H10. In addition, all the coefficient values in Figure 2 demonstrate that these factors are important determinants of the firm's performance in Zimbabwe.

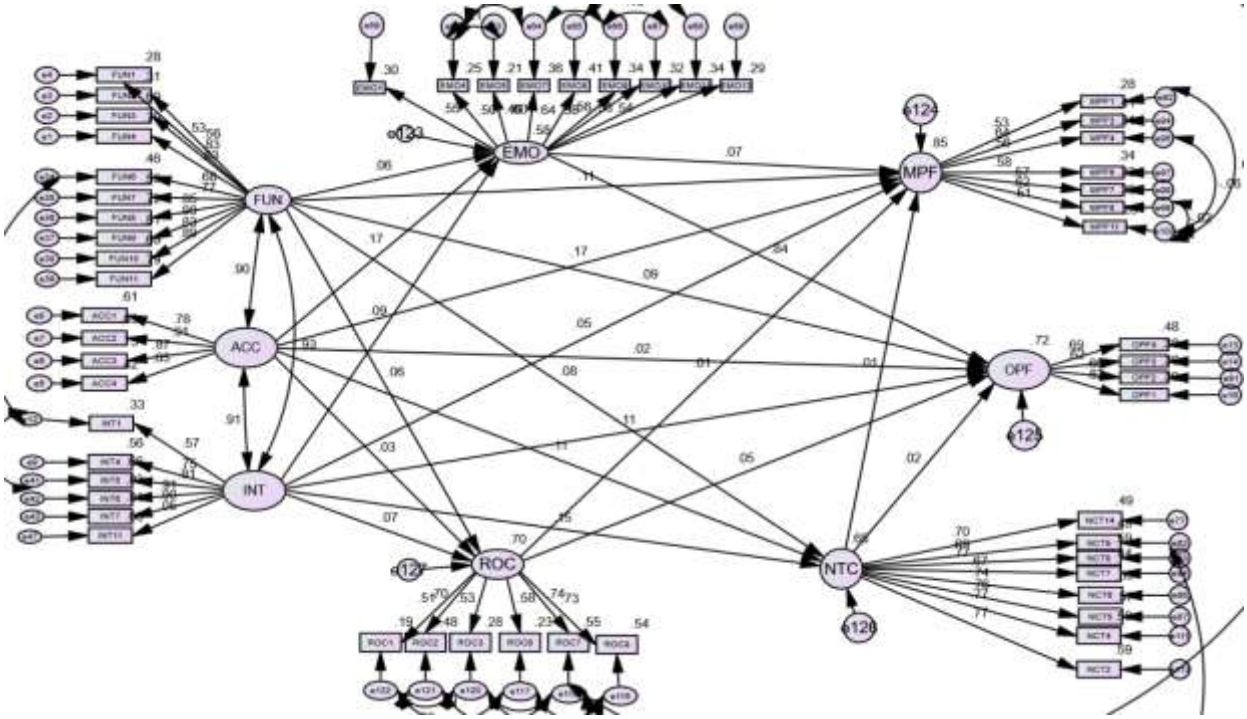

Figure 2: The Research Model showing standardised regression weights

Table 3: Summary of Research Hypotheses

Hypothesis	Relationship	Coefficient	T- Statistics	P-values	Decision
$H_{1.1a}$	FUN → OPF	0.093	2.274	0.048*	Supported
$H_{1.1b}$	FUN → MPF	0.114	1.974	0.050*	Supported
$H_{1.2b}$	INT → MPF	0.110	2.030	0.070**	Supported
$H_{1.3a}$	ACC → OPF	0.024	2.117	0.046*	Supported
H2.1a	FUN → EMO	0.063	9.969	0.000***	Supported
H2.1b	FUN → NCT	0.083	5.375	0.000***	Supported
H2.2a	INT → EMO	0.093	5.762	0.000***	Supported
H2.2c	INT → ROC	0.074	6.708	0.000***	Supported
H2.3b	ACC → NTC	0.112	2.223	0.050*	Supported
H2.3c	ACC → ROC	0.031	2.726	0.021*	Supported
H3.1a	EMO → OPF	0.843	7.735	0.000***	Supported

H3.2a	EMO → MPF	0.071	1.742	0.081**	Supported
H3.2b	NCT → MPF	0.010	3.782	0.004***	Supported
H3.2c	ROC → MPF	0.153	2.501	0.012*	Supported
H4.1a	FUN → EMO → OPF	0.151	9.479	0.000***	Supported
H4.1b	FUN → NTC → OPF	0.067	3.778	0.004***	Supported
H4.1d	INT → EMO →OPF	0.002	1.996	0.074**	Supported
H4.1f	INT → ROC → OPF	0.002	2.668	0.039*	Supported
H4.1h	ACC → NTC → OPF	0.037	6.478	0.000***	Supported
H4.1i	ACC → ROC → OPF	0.001	7.532	0.000***	Supported

Table 3…

DISCUSSIONS

The extant research has proposed a conceptual framework that links ICT support for core competencies, competitive advantage and firm performance based on the resource-based view of the firm. Our findings show that using ICT to; neutralise competitive threats, reduce operational costs and exploit market opportunities help firms to achieve superior performance. These findings are consistence with current empirical literature (see, for example, Jardon & Martos, 2012; Kamukama, 2013; Sigalas, 2015; Barney & Hesterly, 2019; Shafiee, 2021). These findings also support hypotheses H_1, H_2, H_3, and H_4. Shafiee (2021) and Zehir et al. (2015) support the finding ICTCC → CADV → FP. ICT supporting a firm's core competencies has the potential to reduce operational costs, improve market penetration, to improve customer-brand equity resulting in strong firm performance (Nwankpa & Roumani, 2016; Chae et al., 2014; Sigalas, 2015; Kirrane et al., 2017; Bozic & Dimovski, 2019; Barney & Hesterly, 2019).

This research finds it attractive that competitive advantage plays a significant role in mediating core and firm performance ICT support. This finding supports the literature (Kabanda, 2014; Makiwa & Steyn, 2016; Chege et al., 2020; Ferreira et al., 2020; Dzindikwa, 2021; Dzindikwa & Kabanda, 2022). For instance, Cemons and Row (1991) observed that ICT could provide sustainable competitive advantages if considering leverage structural differences between firms like the extent of vertical integration and diversification. All hypotheses were accepted.

This research concludes that ICT support for core competencies and competitive advantage is essential for improving a firm's performance. Ravichandran and Lertwongsatien (2005) identified two dimensions of ICT that can help improve firm performance: transformational competence and operational competence. Our research makes a pivotal contribution to existing literature. First, we tested and validated a conceptual model that contains numerous constructs linked to business performance. To our knowledge, this research is one of the few that integrates quantitative methodologies and the resource-based view of the firm to assess firm performance in Zimbabwe. Second, whilst many studies have focused on the

direct link between ICT support for core competencies and firm performance, this research supplement literature on the mediating role of competitive advantage. The results show that ICT can improve firm performance if the deployment of resources and capabilities aligns with efforts to build distinctive core competencies. Thus, they include creating human capital, innovation processes, decreasing switching costs, increasing complementarities between business practices and ICT usage, streaming business processes, improving managerial decisions, and dynamic organisational structure.

RECOMMENDATIONS AND IMPLICATIONS

Our study shows that ICT support for core competency positively influences firm performance. The recommendation is that firms invest in the latest technologies to develop high-performing ICT departments. This approach will enable these firms to improve their strategic thrust and implement mechanisms to ensure that ICT capabilities focus on creating sustainable competitive advantages and other strategic areas significant for achieving superior firm performance. There is also a need for firms to focus on developing essential information systems skills through continuous training of all managers in using ICTs and paying fair compensation to retain critical technical employees. It is important to note that in developing countries like Zimbabwe, ICT infrastructure and human capital development in terms of skills acquisition take more time to develop. This observation implies that firms that fail to establish ICT functionality-related capabilities and systematically invest in acquiring ICT resources are likely to be out-competed in the marketplace. Such firms could lack the capacity and ability to leverage ICT effectively in creating sustainable competitive advantages. If firms perform well, then the government can get more tax revenues. ICT equipment is costly to import into Zimbabwe.

CONCLUSION

Many firms in Zimbabwe have made a significant investments in ICT development. Few firms have benefitted from this investment in improved financial performance. The purpose of the study is to explain the relationship between ICT support for core competencies, competitive advantage and firm performance. Whilst studies in Zimbabwe have relied on the dynamic approach; this study departs by using the resource-based view of the firm to examine the determinants of firm performance. The study's contribution is to develop a validated nomological framework using latent constructs. We hope that future studies may ride on this study by using longitudinal studies to examine latent and observable constructs that affect firm performance.

LIMITATIONS OF THE STUDY

The study used cross-sectional data to test the causality between ICT support for core competency and firm performance. Whilst, we managed to show the relationship, future studies must use longitudinal studies since cross-section data is a snapshot of a particular point in time. Thus, the direction of causality might need to be treated with caution as it is likely to change over time. Longitudinal studies might show a bi-directional causal relationship where firm performance might lead to improved ICT support for core competency. Furthermore, most constructs used in this research are latent and hence not directly observable. Future studies could improve research direction by using measurable indicators instead of latent constructs such as planning, systems development and ICT operations.

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