Role of national culture for digital transformation strategy implementation: The case of Ethiopian SME

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Abstract

Ethiopia's stride towards a digital economy is encapsulated in the "Digital Ethiopia 2025 strategy," endorsed by the Council of Ministers on June 15, 2020. This strategy is pivotal to Ethiopia's development agenda and is crafted to resonate with the nation's cultural identity. In this comprehensive study, the intricate relationship between Ethiopia's national cultural identity and its digitalization efforts is examined. Through an in-depth analysis of data collected from 210 small and medium-sized enterprises (SMEs) located in Addis Ababa as well as other significant urban centers across the country, our findings reveal that national culture is not merely a background factor but a significant predictor of the success in digital adoption and implementation. The study also confirms the mediating role of digital marketing capability to strengthen the effect of national culture and digital transformation. Our study provides several actionable insights for enhancing digitalization strategies. Firstly, it underscores the importance of incorporating cultural education within digital literacy programs to ensure they resonate with local values and practices. Secondly, it suggests the integration of traditional Ethiopian values into the design and functionality of digital platforms, ensuring that these technologies are culturally congruent and readily accepted by users. These insights are crucial for policymakers, government officials, and other stakeholders who are at the helm of guiding Ethiopia's digital transformation journey in a way that aligns with and respects the nation's rich cultural heritage.

1. Introduction

In alignment with the nation's development agenda set for the decade 2021-2030, Ethiopia unveiled its ambitious digital transformation strategy in 2020, aiming for completion by 2025. This forward-looking strategy leverages Ethiopia's competitive position in the global market, characterized by its lower labor costs, to enhance digital services across pivotal economic sectors. Specifically, it seeks to modernize and integrate digital technologies within agriculture streamlining processes and increasing efficiency; bolster manufacturing through innovation and digital upskilling; and enrich tourism experiences with advanced digital platforms, thereby fostering economic growth and sustainability.

The relationship between national culture and digital transformation takes on various forms, some complementary and others contradictory. One-way digital technologies contribute to the preservation of national culture is through the use of digital media to capture and document traditional practices, knowledge, and skills (Rowan, 2023). Digital transformation also contributes to solving environmental problems by encouraging sustainable practices such as renewable energy, waste reduction, and resource efficiency. Furthermore, it can be concluded that the digital marketing capabilities of SMEs significantly enhance the agility and responsiveness of businesses, thereby accelerating the impact of national culture on the digital transformation efforts of a nation. This symbiotic relationship underscores the importance of strategic digital initiatives in fostering a conducive environment for innovation and growth within the digital economy.

The intersection of national culture values and digital transformation presents a complex landscape that has been insufficiently charted by researchers. A scant number of studies have considered how the deeply rooted cultural frameworks impact the successful deployment and effectiveness of digitalization strategies. Alshammari & Alshammari, (2023), point to this gap, emphasizing the lack of understanding regarding the mediating role played by digital marketing capabilities within this context. This study aims to enrich the existing literature by

providing empirical data on the impact of national culture on digital transformation, examining how digital marketing capabilities mediate this relationship.

2. Literature Review and hypotheses

National culture is ''the collective programming of the mind which distinguishes the members of one group or category of people from another'' (Hofstede, 2011). Hofstede argues that people share a collective national character that represents their cultural mental programming, which shapes individuals' values, beliefs, assumptions, expectations, attitudes and behaviors. He identifies six dimensions along which national cultures vary: power distance, uncertainty avoidance, individualism vs. collectivism, femininity vs. masculinity, long-term vs. short-term orientation and Indulgence versus Restraint Hofstede, (2011) and provides ratings on these dimensions for many countries. He argued that "culture change basic enough to invalidate the country dimension index rankings, or even the relevance of the dimensional model, will need either a much longer period says, 50 to 100 years or extremely dramatic outside events" (Hofstede, 2011).

In the realm of Information Systems (IS) and Management research, one theory that has gained considerable prominence when exploring the influence of national culture is Hofstede's national cultures theory. This theory, introduced by Geert Hofstede, has been frequently cited and utilized in various studies examining the impact of national culture dimensions (Leidner & Kayworth, 2006). Researchers often turn to Hofstede's theory as a framework for comprehending the role of national culture within organizations (Alshammari & Alshammari, 2023). Scholars have utilized this framework to investigate a broad range of topics, including cross-cultural IT adoption, technology acceptance, organizational behavior, knowledge sharing, and leadership styles across different national contexts (Alshammari & Alshammari, 2023).

3. Model and hypotheses

H1: National culture values and digital transformation success are related

H1a: Masculinity culture and digital transformation success are related

(Mohd Ali, Tretiakov, & Crump, 2009) said that, in higher Masculine cultures, the domination by the men is visible. This can affect the success of a digitalization strategy implementation negatively. These determinants could be influenced by the cultural dimensions of collectivism, uncertainty avoidance, long-term orientation and power distance directly or via their determinants. We use the determinants and a cultural dimension to formulate a correlational model of the impact of national culture on IS planning success.

(Almudhawi, 2019) said that, leadership for cross-functional integration and manufacturing strategy linkage to corporate strategy differ between levels of power distance, individualism vs collectivism and uncertainty avoidance. Functional integration and formulation of manufacturing strategy also present differences according to the degree of individualism vs collectivism and long-term orientation. Originality/value: Results indicate that national culture is a key aspect for the OS process.

H1b: Higher power distance culture and digital transformation success are related

(Lim, Leung, Sia, & Lee Matthew, 2004) reveal that higher power distance accounted for 14% of the explained variance (on top of the combined variance of 63% explained by national income level, educational level, economic growth rate, unemployment rate, and crime rate) in predicting Internet shopping rates. For countries lower in uncertainty avoidance, individualist cultures show higher Internet shopping rates than do collectivist cultures. (Zendehdel, Paim, & Delafrooz, 2016) revealed that significant moderation effects with regards to the association of subjective norm and attitude, perceived risk and other factor were significantly correlated with the attitude towards online shopping while perceived risk was observed to be negatively significant on attitude.

H1c: Uncertainty avoidance culture and digital transformation success are related

(Cheung & Chang, 2009) indicated that uncertainty avoidance had a stronger effect on digital strategy implementation. Also, Security had a positive relationship with trust. The study showed that information content was positively related to trust of online vendors. A study by (Kim, Urunov, & Kim, 2016) confirmed the negative effects of collectivism culture on users trust for ecommerce platforms. Culture significantly influenced trust of Asian consumers, as well as their intention and online behavior (Faraoni, Hu, Rialti, & Zollo, 2021).

H1d: Collectivism culture and digital transformation success are related

The findings indicate that the dimensions of organizational culture have a variation of strong, medium and weak associations with the dimensions of strategy execution. Achievement orientation was found to have the highest effect on strategy execution dimensions and the future planning orientation the second highest.

H2: Digital marketing competencies and digital transformation success are related

H3: National culture values and digital marketing competencies are related

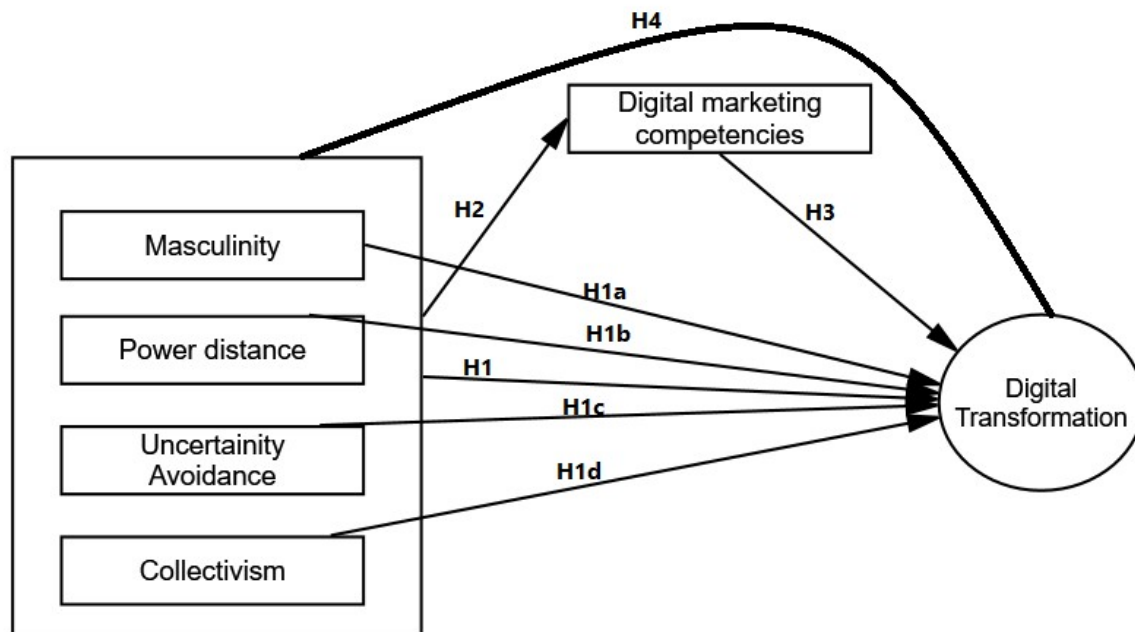**H4: Digital marketing competencies mediated the effect of national culture on digital transformation**

Figure 1: The research farmwork

4. Methodology:

The study uses a positivist epistemological choice and a quantitative approach. A rigorous and systematic research design was employed using a survey method. The survey questions were carefully developed based on previously validated instruments to ensure the reliability and validity of the data collected. By employing both structural equation modelling (SEM) and the SPSS statistical tool, the study was able to analyze the collected data and test the proposed conceptual framework. The study used validated scales to measure the constructs, and the measures for the constructs were as follows: 24 item scale adopted from (Hofstede, 2011) was used to measure national culture, while 5item scale was used to measure digital marketing competencies adopted from (Gelgile & Shukla, 2024) and Finally, Digital Transformation Assessment (DTA) was used to measure digital transformation adopted from (Nikmehr, Hosseini, Martek, Zavadskas, & Antucheviciene, 2021).

Data from 210 respondents are utilized from the 240 distributed questionnaires. Four SME types, namely, poultry, fruits & vegetables, dairy and tourism employing over 20 individuals being included in the study. A judgmental approach was employed for SME selection, while a systematic random sampling method was used for participant selection.

5. Instrument Validation

The framework of the model is constructed upon three foundational pillars: national culture, digital marketing capabilities, and digital transformation. To tailor the measurement items to the unique context of this research, they were carefully identified and subsequently adapted. The reliability of these items was rigorously evaluated by analyzing their factor loadings on the corresponding latent variables, ensuring that all item factor loadings

surpassed the minimum threshold value of 0.5. In assessing the reliability of constructs, we employ several statistical measures to ensure robustness and validity. The composite reliability (CR) is calculated alongside the average variance extracted (AVE) and Cronbach's alpha, as suggested by (Hu & Bentler, 1999). The results indicate strong reliability across the board, with composite reliability values of 0.911, 0.892, and 0.952. Furthermore, the Average Variance Extracted (AVE) yields impressive results with values of 0.901, 0.830, and 0.941, respectively. Lastly, the average Cronbach's alpha for the three constructs stands at 0.91, reaffirming the consistency of our measures.

6. Model validation

Based on the Hu & Bentler, (1999) recommendation, the results are exhibiting the fit of the model to the data. Hence, the Normed chi-square result of 1.521 is in the appropriate range of 1 to 3. The RMSEA of 0.051 shows a good fit since it is < 0.5; GFI is acceptable at 0.911. The results for the remaining indices are 0.050 for SRMR, 0.975 for CFI, 0.911 for NFI, and 0.845 for AGFI, all are in the acceptable ranges (<0.09, >0.95, >0.90, and >0.80 respectively).

7. Results, and discussion

The relationship between the constructs was rigorously evaluated using the structural equation modeling technique. To ensure the internal consistency, the items' factor loadings on their respective latent variables were meticulously examined. The results were promising, with all item's factor loadings surpassing the 0.5 threshold value, indicating a reliable measure.

After a rigorous validation procedure, a prediction analysis is conducted. The results show that, national culture have a positive effect on digital transformation and digital marketing capabilities. Further, it is found that SMEs digital marketing capabilities can fully mediate the positive effect of national culture to successfully implement a digitization initiative. Therefore, it can be concluded that all the proposed hypotheses, both the direct and indirect are statistically supported.

The study explores the critical role of national culture in shaping digitalization strategies, offering insights on how businesses can leverage this understanding to enhance their operational efficiency, foster innovation, and achieve competitive advantage in the digital transformation landscape. It underscores the importance of digital marketing capabilities, such as search engine optimization (SEO), content marketing, social media engagement, and targeted email campaigns, which are instrumental in the digital transformation of SMEs. The research calls on politicians to bolster investments in key areas like digital literacy, e-commerce platforms, and robust electronic payment infrastructures to facilitate SMEs' integration into the digital marketplace. Moreover, it is advocated that SMEs' digital marketing capabilities, particularly in areas such as data analytics and customer relationship management (CRM), be strengthened to effectively mediate the influence of our national culture on expediting the 'Digital Ethiopia 2015' strategy's enactment.

8. Acknowledgments

9. Declaration of interest statement

Dr. Hailemariam Kebede would like to submit the manuscript entitled "The role of national culture for digital transformation strategy implementation: The case of Ethiopian /SME's/" to be publication as an original article. I declare that this manuscript is original, has not been published before and is not currently being considered for publication elsewhere. Moreover, no conflict of interest associated with this publication, and there has been no significant financial support for this work that could have influence its outcome.

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Table 1: Hypotheses Testing

Paths			Est.	SE	CR	P
National culture	H1	Digital transformation	0.257	0.112	4.669	***
Masculinity	*H1a*	*Digital transformation*	*0.210*	*0.095*	4.167	***
Power distance	*H1b*	*Digital transformation*	*0.301*	*0.101*	4.570	***
Uncertainty avoidance	*H1c*	*Digital transformation*	*0.264*	*0.170*	3.954	***
Collectivism	*H1d*	*Digital transformation*	*0.154*	*0.194*	3.654	***
National culture	H2	Digital marketing competencies	0.359	0.036	5.113	***
Digital marketing competencies	H3	Digital transformation	0.215	0.141	2.518	***
National culture	H4	Digital transformation	0.178	0.143	3.784	***

**0.05; ***0.01