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ISSN: (Print) (Online) Journal homepage: <https://journals.bdu.edu.et/index.php/ejta>

To cite this article: Mebrahtom Teklehaimanot Tesfa, Hailekiros Sibhato Gebremichael & Kinfe Tsegay Beyene (2025) DO ENTREPRENEURIAL CAPABILITIES DEFINE COMPETITIVENESS IN TEXTILE AND APPAREL SMES COMPARED TO OTHER SECTORS?, Ethiopian Journal of Textile and Apparel, 54 -71,

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# DO ENTREPRENEURIAL CAPABILITIES DEFINE COMPETITIVENESS IN TEXTILE AND APPAREL SMEs COMPARED TO OTHER SECTORS?

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**ABSTRACT**

This research aims to examine the impact of entrepreneurial capabilities on the competitiveness of Small and Medium Enterprises (SMEs) and the mediating role of dynamic capabilities. Structural equation modeling was utilized to test the hypotheses developed on a sample of 459 manufacturing SMEs (20% of them are textile and apparel) operating in Tigray, Ethiopia. Data were collected using a structured questionnaire. Proportional stratified sampling was used to ensure a representative sample of SMEs from each city. The empirical results of the study revealed that entrepreneurial and dynamic capabilities have a positive and significant influence on SMEs' competitiveness. Specifically, entrepreneurial capabilities can positively and significantly impact the SMEs' competitiveness mediated by dynamic capabilities. The competitiveness of textile and apparel SMEs' is influenced by their entrepreneurial and dynamic capabilities, similar to other sectors. However, the competitiveness of the chemical and mining sectors is not influenced by dynamic capabilities and entrepreneurial capabilities, respectively. This research contributes theoretically by integrating four entrepreneurial capabilities (autonomy, risk-taking, proactiveness, and innovativeness) into a single framework grounded in the dynamic resource-based view of competitiveness (asset, process, and performance). These findings address a research gap by providing empirical evidence of the mediating role of dynamic capabilities in the relationship between entrepreneurial resources and SMEs' competitiveness from an emerging economy perspective. This study offers valuable insights for SME managers/owners and decision-makers highlighting the importance of leveraging entrepreneurial and dynamic capabilities to enhance competitiveness.

**KEYWORDS:** Competitiveness, Dynamic capabilities, Entrepreneurial capabilities, SMEs, Textile and Apparel

1. **INTRODUCTION**

Small, and Medium Sized Enterprises (SMEs) play a critical role in economic and social development and are essential to every economy, particularly in developing and least-developed countries (LDCs) (Abebe, 2014; Neagu, 2016; Ganne, Imessaoudene and Lundquist, 2022). Firms that fall under this category account above 50% employment rate and represent roughly 90% of all businesses globally (Ganne, Imessaoudene, and Lundquist, 2022). Their contribution to GDP is lower, at around 35 percent in developing countries and 70 percent less productive than large firms (WTO, 2016). The SMEs' growth contribution to the nation is through their higher employment opportunities and production of new and value-added products and services to the market. However, the SMEs' competitiveness is very weak in Ethiopia. According to the Ethiopian Ministry of Labor and Skill (MLS) report in Ethiopia, more than 2 million enterprises are running in the country. This report shows 98% accounts for micro, small, and medium, enterprises (SMEs) and the rest 2% are categorized as big enterprises. Currently, most SMEs in Ethiopia are struggling for survival instead of their sustainable development (MLS, 2023).

Different studies have been done so far to improve the competitiveness and sustainable development of SMEs. The studies done so far on this specific area (Ethiopia) list the basic success factors for SMEs (Alamineh, 2020; Gebremeskel, Gebremichaela and ..., 2020; Gebreselassie, 2020), the impact of SMEs on Economic sustainability (Ayalu, Abbay and Azadi, 2022; Endris and Kassegn, 2022) and their innovation practices (Addisu, Gebremichael and GebreMedhin, 2020). Additionally, the challenges to their success and competitiveness are concentrated on external and policy issues (Meresa, 2019; Agarzayev, 2020; Alamineh, 2020).

However, the international literature argues that SMEs exploiting their internal strength and mobilizing their resources have sustainable competitiveness and growth (Adjabeng et al., 2022; Fan et al., 2021; Mujiono & Mulawarman, 2017; Vu, 2020; Yaghoubi et al., 2017).

When small and medium enterprises (SMEs) compete in a volatile and dynamic business environment, having entrepreneurial capability is crucial for sustaining success (Vu, 2020). This capability is related to leadership abilities that allow firms to seize opportunities ahead of competitors (Sandybayev, 2019) to maintain competitiveness. Research findings (Chen, 2018; Vu, 2020; Adjabeng et al., 2022; Hu et al., 2022) indicate that entrepreneurial capability (EC) is essential for SMEs' performance and competitiveness. However, simply having entrepreneurial intentions or capabilities does not guarantee sustainable competitiveness for a firm (Woldesenbet, Ram, and Jones, 2012; Abbas et al., 2019). Not all firms with entrepreneurial capabilities (EC) have been able to sustain their business successfully. For example, some studies show a positive and significant impact of a firm's EC on its competitiveness (Gupta and Batra, 2016; Simiyu, Namusonge, and Sakwa, 2016), while others find an insignificant effect (Wu, 2007; Affendy, Asmat-Nizam and Farid M.S, 2015). Additionally, the influence of entrepreneurial networks on SMEs' performance has been deemed insignificant in some cases (Abbas et al., 2019). This suggests that the impact of EC competitiveness is not always straightforward, but rather varies based on growth phases financial crises, or market turmoil (Fuentes-Fuentes et al., 2014; Jones et al., 2011). Therefore, it is inaccurate to assume that all SMEs possess the same level of EC and utilize it in the same way for competitiveness (Kanapathipillai, Kumaran and Narayanan, 2022). Additionally, the role of EC is not similar for all business types depending on their market competition and customer preference change frequency. Consequently, several researchers (Chen, 2018; Vu, 2020b; Adjabeng et al., 2022; Hu et al., 2022) recommend that future studies explore this relationship across different industries and countries.

In general, even though, SMEs play a positive role in the development of the continent, SMEs in Africa are continuing to face remarkable obstacles that are hindering their long-term survival. As a result, 5 out of 7 SMEs cease their business in the first year of establishment. The main reasons for the failure of their competitiveness are internal and external factors. However, firms that are capable of exploiting and mobilizing their internal resources and capabilities have better sustainability. Additionally, the role of internal capabilities in SMEs' competitiveness is not well documented from the emerging economy perspective regarding the business type they operate. Moreover, the node between SMEs' dynamic and innovation capabilities with their competitiveness is not conclusive and consistent.

To address the gaps in the literature, research focusing on the impact of entrepreneurial and dynamic capabilities on SMEs' competitiveness is crucial for sustainability and provides valuable evidence for policymakers, reducing gaps in knowledge.

1. **LITERATURE AND HYPOTHESIS DEVELOPMENT**
	1. **Entrepreneurial Capability (EC) and SME Competitiveness**

Entrepreneurial capability (EC) refers to an individual’s capability, skill, or experience that aids in identifying and seizing entrepreneurial opportunities to effectively achieve entrepreneurial goals by creating business value (Xie and Huang, 2014). In the highly volatile and dynamic market, entrepreneurial capability can alter the competitive landscape game of a firm (Vu, 2020). Furthermore, an entrepreneurial capability is essential for the performance and competitiveness of SMEs (Chen, 2018; Vu, 2020; Adjabeng et al., 2022; Hu et al., 2022).

Even though the relationship between EC and business performance is studied in the literature, the influence of EC on a firm’s competitiveness is not always straightforward. Instead, it is situation or eventuality-oriented (Wiklund and Shepherd, 2011; Sciascia et al., 2014). Its impact varies depending on growth phases, financial crisis, or market turbulence (Fuentes-Fuentes et al., 2014; Jones et al., 2011). EC has a positive and significant influence on the firms' competitiveness (Gupta and Batra, 2016; Simiyu, Namusonge and Sakwa, 2016; Fan et al., 2021; Adjabeng et al., 2022). On the other hand, the effect of EC on the competitiveness of SMEs is insignificant (Wu, 2007; Affendy, Asmat-Nizam, and Farid M.S, 2015). Additionally, the impact of entrepreneurial networks on SMEs' performance is also insignificant (Abbas et al., 2019).

Therefore, it cannot be assumed that all SMEs have similar entrepreneurial capabilities and utilize them equally due to factors such as age and exposure to education that contribute to their competitiveness (Kanapathipillai, Kumaran, and Narayanan, 2022). Furthermore, some researchers (Chen, 2018; Vu, 2020; Adjabeng et al., 2022; Hu et al., 2022) recommend that future studies should expand research to include different industries and countries. In this regard, there was minimal literature found in the Ethiopian context and globally. Based on this, the following hypothesis has been developed.

H1: Entrepreneurial capability has a significant impact on SMEs' competitiveness

* 1. **Dynamic Capabilities and SMEs’ Competitiveness**

Dynamic capability is a crucial part of the management process that helps stimulate a resource-based view (RBV) to enhance the competitiveness and performance of SMEs (Chumphong, Srimai, and Potipiroon, 2020). Scholars have conducted various studies on the relationship between dynamic capability (DC) and SMEs’ competitiveness. DC is a critical tool for improving performance and developing sustainable competitiveness for SMEs (Jeng and Pak, 2016; Mansouri et al., 2022). The competitiveness and performance of SMEs are directly and positively influenced by their DC (Chumphong, Srimai, and Potipiroon, 2020; Fitriati et al., 2020; Khalil and Belitski, 2020; Hernández-Linares, Kellermanns, and López-Fernández, 2021; Mansouri et al., 2022).

DC consists of different interrelated components, each with varying importance for SMEs' competitiveness (Hernández-Linares, Kellermanns and López-Fernández, 2021). Implementing only a single DC may hurt firm competitiveness since they are interconnected and interwoven with each other (Breznik and Lahovnik, 2016). Furthermore, Sijabat et al. (2021) found that DC impacts SMEs' competitiveness but is not clear. The effect of DC on SMEs' competitiveness has not been fully understood and lacks a definitive conclusion (Ferreira, Cardim, and Branco, 2018; Vu, 2020). Jeng & Pak, (2016); Jurksiene & Asta, (2016), and Vu, (2020) recommend empirical testing of the relationship between DC and SMEs' competitiveness across various sectors. Other researchers have studied the effect of DC on SMEs' competitiveness (Ashiru et al., 2022; Battaglia & Neirotti, 2022; Ferreira et al., 2018; Ferreira & Coelho, 2019; Hernández-Linares et al., 2021; Mudalige et al., 2019) and suggest further research in different countries due to minimal empirical investigations (Jurksiene and Asta, 2016; Vu, 2020). Despite these gaps in the literature, there has been no research specifically focusing on this topic in Ethiopia, particularly in Tigray. Therefore, based on these reasons, we have developed the following hypothesis.

H2: Dynamic capability has a significant impact on SMEs’ competitiveness

* 1. **The Role of Entrepreneurial Capabilities on SMEs' Dynamic Capabilities (DC)**

SMEs are continuously eager to identify key capabilities and factors that have a significant effect on their sustainable competitiveness for survival (Sijabat et al., 2021). SMEs equipped with better entrepreneurial capabilities have a significant and positive impact on their DC (Wu, 2007; Abbas et al., 2019; Fitriati et al., 2020). The innovativeness and autonomy of SMEs help them easily sense the business environment and reconfigure internal and external resources for sustainable competitiveness (Fitriati et al., 2020; Abu-rumman, Shraah and Al-Madi, 2021; Yi, Han, and Cha, 2021). The relationship between EC and DC is not studied properly, especially from the perspective of developing countries (Bii and Onyango, 2018). Therefore, further empirical testing and investigation are needed (Kaluarachchige et al., 2021; Farkas, 2022). Additionally, researchers have recommended empirically testing this type of research in other countries (Abbas et al., 2019; Khouroh et al., 2020) to deepen the literature. Finding papers in this area in the African context in general and in the Ethiopian context was minimal. Based on this, we have developed the following hypothesis.

H3: Entrepreneurial capabilities have a significant impact on SMEs’ dynamic capabilities

* 1. **The role of Entrepreneurial Capabilities (EC) on SMEs’ competitiveness: Mediating by Dynamic Capabilities (DC)**

SMEs' entrepreneurial capabilities provide them with skills, experience, and knowledge that help in identifying and exploiting upcoming and available business opportunities (Baumol, 1993; Ray, Barney, and Muhanna, 2004). Grounding in the Resource-Based View (RBV) theory, resources have a positive influence on a firm’s performance (Ray, Barney, and Muhanna, 2004). However, firms with high entrepreneurial resources failed to impact their performance (Wu, 2007). The RBV theory does not account for dynamic markets, as market changes are unpredictable and nonlinear (Teece, Pisano, and Shuen, 1997; Kathleen M Eisenhardt and Martin, 2000). Merely having entrepreneurial intention or capabilities is not enough to ensure a firm's sustainable competitiveness. It must also possess the ability to sense the environment and reconfigure its resources in response to change (Woldesenbet, Ram, and Jones, 2012; Abbas et al., 2019). Firms' entrepreneurial capabilities significantly and positively impact their performance when mediated by DC (Wu, 2007; Fitriati et al., 2020) but have no significant impact without DC (Wu, 2007). SMEs' entrepreneurial capabilities vary based on factors such as age, exposure to education, and utilization of competitiveness (Kanapathipillai, Kumaran, and Narayanan, 2022). Indika et al. (2021) developed a conceptual model on the impact of EC on SMEs' competitiveness mediated by DC, recommended for empirical testing. Additionally, some researchers (Chen, 2018; Vu, 2020; Adjabeng et al., 2022; Hu et al., 2022) suggest that future studies should broaden the research to include different industries and countries. Moreover, there is limited research on the Ethiopian context and globally. Based on these points, the following hypothesis has been formulated:

H4: Dynamic capabilities mediate the relationship between Entrepreneurial capabilities and SMEs’ competitiveness

* 1. **Entrepreneurial and Dynamic Capabilities on SMEs’ Competitiveness: Moderated by Business Type**

The role of DC and EC on firms' performance is not straightforward. This variation may occur due to many factors such as region and business type (Yahaya and Nadarajah, 2023). SMEs operating in industries where customer preferences can easily impact them are vulnerable to failure (Fatoki, 2018). Therefore, the impact of DC and EC on firms' competitiveness is not uniform across all firms (Gwadabe and Amirah, 2017). In the literature, it is rare to find studies on the influence of business type on firms' competitiveness globally, especially in emerging economies. Accordingly, the following hypotheses have been proposed:

H5: Business type moderates the relationship between Entrepreneurial capabilities and SMEs’ competitiveness

H6: Business type moderates the relationship between Dynamic capabilities and SMEs’ competitiveness

 Depending on the above hypothesis and narrations, the following conceptual framework has been developed.

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**Figure 1.** Conceptual framework (developed by the Authors)

1. **RESEARCH METHODOLOGY**
	1. **Research Context and Measurement**

This research was conducted on SMEs operating in the manufacturing sector in Tigray, Northern Ethiopia. The manufacturing sectors included wood and metal works, textiles, and apparel, construction inputs, chemical and packaging, agro-processing, and mining according to the office category. The focus on this specific sector is not only due to its impact on the region's economy (Ayalu, Gebrekidan, and Hossein, 2023) but also because there is minimal research depth in this sector in developing countries. The literature survey on this sector mainly consists of case studies and the development of conceptual frameworks, with a lack of empirical studies conducted on SMEs operating in this sector. Therefore, SMEs in the manufacturing sector deserve more research attention to generate more robust studies in developing countries.

* 1. **Sampling and Data Collection**

The study targeted a population of 3262 manufacturing SMEs in selected cities, obtained from the registered list of SMEs in the regional authority office. This population included SMEs in six sectors: wood and metal, textile and apparel, mining, chemical and packaging, agro-processing, and construction inputs. The sample size of 459 manufacturing SMEs (20% from the textile and apparel sector) was determined using the Taro Yamane formula (Uakarn, Chaokromthong, and Sintao, 2021)considering a 95% confidence level, a 5% margin of error, and a 29% contingency.

$n=\frac{N}{1+Ne^{2}}$Equation 1

Where n sample size

N population size

e= error (0.5) confidence interval (reliability) of 95%

Proportional stratified sampling was used to ensure the representation of SMEs from each city as shown in Table 1. Subsequently, simple random sampling was employed to select SMEs from the cities in proportion and include them in the sample. Data was collected through a structured questionnaire which allows for broad coverage and provides a significant amount of information in a short time (Saunders, Lewis, and Thornhill, 2019). This method also helps to protect respondents and the researcher from potential bias (Kim et al., 2016). Out of the 459 questionnaires administered, eleven were not returned, five were excluded during data cleaning, and two were removed from the SPSS analysis due to a standard deviation of zero. The valid responses collected totaled 441, resulting in a response rate of 96.1%.

* 1. **Measurements of Study Variables**

To operationalize the identified variables and factors, an intensive literature review on the subject matter was previously conducted. The selected instruments, variables, and scales used were adopted from pre-existing studies, and translated into language that was more understandable to the specific respondents. The measurement items were selected because they aligned with the conceptual model of the current study (content validity) and were found to have adequate previous reliabilities. Entrepreneurial capabilities (Martínez-Román, Gamero, and Tamayo, 2011; Karimi and Walter, 2016; Makhloufi et al., 2021), Dynamic capability measurement was adopted from (Lin and Wu, 2014; Breznik and Lahovnik, 2016; Hernández-Linares, Kellermanns and López-Fernández, 2021), and competitiveness from (Ambastha and Momaya, 2004; Wu, 2009; Lafuente, 2019) covering (process flexibility and adaptability), and performance ( productivity and growth).

1. **RESULTS AND DISCUSSION**
	1. **Results**

During the examination of thoughtful measurements, it is necessary to assess their internal consistency, discriminant validity, and convergent validity (Hair, Howard, and Nitzl, 2020). The sampling adequacy test was conducted using the Kaiser-Meyer-Olkin (KMO) test to determine the appropriateness of conducting factor analysis. According to Farrukh et al. (2019), the KMO value should not be less than 0.5. Determining the shared variance among the variables is crucial for understanding internal consistency, which is explained through composite reliability (CR) (Fornell & Larcker, 1981). The recommended threshold value for CR is 0.7 or above (Hair et al., 2011). In our research, all constructs showed reliable results, with a minimum CR value of 0.83 as indicated in **Table 1**.

Convergent validity was assessed using the average variance extracted (AVE), with a recommended threshold value of above 0.5 (Fornell & Larcker, 1981). In our analysis, the AVE value ranged from 0.645 to 0.864, meeting the required criteria.

**Table 1**. Descriptive Statistics

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Construct  | KMO | Cronbach’s alpha | CR |  (AVE) |
| Entrepreneurial capability  | 0.917 | 0.933 | 0.843 | 0.645 |
| Dynamic capability | 0.861 | 0.863 | 0.874 | 0.699 |
| Competitiveness  | 0.942 | 0.933 | 0.927 | 0.864 |

The findings of the assessment indicate that all constructs met the expected threshold value, and we then established acceptable construct reliability. Additionally, internal consistency was evaluated using Cronbach’s alpha which measures the internal reliability of the latent constructs. The recommended threshold value for Cronbach’s alpha is 0.7 (Pundziene and Bouwman, 2020) and our results show that all constructs met this threshold with good construct reliability. Furthermore, the extent to which constructs are strongly related to each other and how indicators specifically relate to a single construct was assessed through discriminant validity (Sarstedt et al., 2014) using the criteria established by Fornell & F.Larcker (1981). Discriminant validity was assessed through the square root of the Average Variance Extracted (AVE). In the matrix, the diagonal values were greater than the correlations between constructs (off-diagonal values) in the corresponding rows and columns as shown in Table 3. This indicates that there are no concerns regarding discriminant validity in our results.

Similarly, to asses the theoretical relationship of the constructs, a convergent validity test was conducted using the average variance extracted (Hair et al., 2011) with the suggested threshold of above 0.5 (Fornell & Larcker, 1981). The analysis of the test results revealed that the AVE value ranged from 0.645 to 0.864 as depicted in **Table 1**.

Through data analysis, the model fit was evaluated using the Tucker–Lewis Index (TLI), Incremental Fit Index (IFI), Comparative Fit Index (CFI), CMIN/DF, root mean square residual (RMR), and Root mean square error of approximation (RMSEA). The threshold point mentioned in the literature, but generally TLI, IFI, and CFI values above 0.9, CMIN/DF<3, RMR) less than 0.05, and RMSEA values less than 0.08 are considered indicators of a good model fit (Chang and Chen, 2020). The analysis results showed CMIN/DF values of 1.64, RMSEA of 0.038, TLI of 0.967, CFI of 0.971, and IFI scores of 0.972, indicating a good model fit.

* **Structural Model Analysis**

This research was conducted using SPSS for descriptive analysis. Structural Equation Modeling (SEM) with Analysis of Moment Structural (Amos), a multivariate statistical technique, was utilized to analyze the results and test the hypotheses we established. The structural model’s validation assessment was assessed through hypothesis testing. The structural model was evaluated with 5000 subgroups using Bootstrap to examine the relationship in Figure 1. The direct and indirect hypothesis results are presented in Table 4.

**Table 2**. Factor loading

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Factors  |  |   |   | loadings |
|   |   | DC | <--- | EC | 0.705 |
|   |   | Comp | <--- | EC | 0.229 |
|   |   | Comp | <--- | DC | 0.651 |
|   | Autonomy | <--- | EC | 0.74 |
|   | Pro-activeness | <--- | EC | 0.927 |
|   | innovativeness | <--- | EC | 0.726 |
|   | integration | <--- | DC | 0.77 |
|   | reconfiguration | <--- | DC | 0.84 |
|   | Sensing | <--- | DC | 0.893 |
|   | process | <--- | Comp | 0.897 |
|   | performance | <--- | Comp | 0.961 |
| Entrepreneurial capability  | Autonomy | ECa3 | <--- | Autonomy  | 0.811 |
| ECa2 | <--- | Autonomy  | 0.815 |
| ECa1 | <--- | Autonomy  | 0.776 |
| Pro-activeness | ECp2 | <--- | Pro  | 0.774 |
| ECp1 | <--- | Pro  | 0.774 |
| innovativeness | ECi1 | <--- | Inn  | 0.732 |
| ECi2 | <--- | Inn  | 0.714 |
| Dynamic capabilities  | Sensing | DCs3 | <--- | Sen  | 0.762 |
| DCs2 | <--- | Sen  | 0.835 |
| DCs1 | <--- | Sen  | 0.808 |
| re-configuration | DCr3 | <--- | Reco | 0.722 |
| DCr2 | <--- | Reco | 0.741 |
| DCr1 | <--- | Reco | 0.805 |
| integration | DCi4 | <--- | Inte | 0.757 |
| DCi3 | <--- | Inte | 0.785 |
| competitiveness | process | Cpr3 | <--- | Proc  | 0.757 |
| Cpr4 | <--- | Proc  | 0.783 |
| performance | Cpo1 | <--- | Perfo | 0.706 |
| Cpo2 | <--- | Perfo | 0.7 |
| Cpo3 | <--- | Perfo | 0.795 |
| Cpo4 | <--- | Perfo | 0.741 |
| Cpo5 | <--- | Perfo | 0.721 |
| Cpo6 | <--- | Perfo | 0.762 |
| Cpo9 | <--- | Perfo | 0.697 |

**Table 3**. Discriminant Validity

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | 1 | 2 | 3 |
| 1 | Entrepreneurial capability | **0.803** |   |   |
| 2 | Dynamic capability | 0.688 | **0.930** |   |
| 4 | Competitiveness  | 0.705 | 0.812 | **0.836** |

**Table 4**. Result summary of Hypothesis testing

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |   |   |   | Std. estimate | S.E. | C.R. | P | Result  |
| H1 | Comp | <--- | EC | 0.229 | 0.081 | 2.965 | 0.003 |   Supported  |
| H3 | Comp | <--- | DC | 0.651 | 0.106 | 7.049 | \*\*\* |  Supported  |
| H2 | DC | <--- | EC | 0..705 | 0.073 | 8.762 | \*\*\* |  Supported  |
| H4 | EC=>Comp through DC | 0.459 |  |  | 0.01 | Supported |

Note: \*\*\* is for P<0.001

Primarily, the direct effect analysis confirmed that all three hypotheses were significant. The SME competitiveness was found positively and directly linked with their Entrepreneurial capability (EC), (β=0.229, p=0.003), and Dynamic capability (DC) (β=0.651, p<0.001). Moreover, EC was positively related and significant with DC (β=0.705, p<0.001) and the result points out EC was possible to take as a predictor of DC.

The next was the indirect hypotheses result as it is shown in Table 5. The analysis result revealed that the impact of EC on SMEs' competitiveness was observed through DC. Thus, EC's role in SMEs' competitiveness through DC is positive and significant (β=0.459, p=0.01), so, DC partially mediates the role of EC on the SMEs' competitiveness.

Additionally, the structural equation modeling has been evaluated with the coefficient of determination (R2). The threshold value ranges from 0 to 1, with a higher value indicating a greater explanatory power (Hair et al., 2019; Ozili, 2023). R2 values from 0.0 to 0.09 (0% to 9%) are too weak for an empirical model and should be rejected (Ozili, 2023). But in general, R2 which lies at 0.25 is considered weak, 0.5 moderate, and 0.75 considerable (Hair et al., 2019; Sarstedt et al., 2022; Ozili, 2023). Depending on the field of study, or if most of the explanatory variables are statistically significant, 0.1 or 10% is acceptable (Hair et al., 2019; Ozili, 2023). Thus, the R2 for the SMEs' competitiveness is 0.686 (68.6%), which means 68.6 % of the SMEs sustainable competitiveness variations are explained by entrepreneurial and dynamic capabilities. Likewise, the R2 value for Dynamic capabilities was 0.498 (49.8%) and this indicates that, entrepreneurial capabilities can explain more than 49.8 % variation of the SMEs dynamic capabilities.



**Figure 2**. Structural model analysis results

* **Results on the moderating effect of business-type**

The node between EC and DC on SME competitiveness when business type acts as a moderator has been evaluated for each sector and gives different values.

**Table 5.** Sector-wise hypotheses testing

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Estimate | S.E. | C.R. | P | Result |
| Wood and metal  |
| Comp<--- DC | 0.512 | .055 | 8.310 | \*\*\* | Supported  |
| Comp<--- EC | 0.361 | .053 | 6.765 | \*\*\* | Supported |
| Textile &Apparel |
| Comp<--- DC | 0.399 | .072 | 5.111 | \*\*\* | Supported  |
| Comp<--- EC | 0.387 | .091 | 4.959 | \*\*\* | Supported |
| Agro-processing |
| Comp<--- DC | 0.529 | .100 | 6.104 | \*\*\* | Supported  |
| Comp<--- EC | 0.371 | .100 | 4.278 | \*\*\* | Supported |
| Building material input  |
| Comp<--- DC | 0.491 | .057 | 7.755 | \*\*\* | Supported  |
| Comp<--- EC | 0.362 | .062 | 5.147 | \*\*\* | Supported |
| Chemical and packing  |
| Comp<--- DC | 0.083 | .165 | 0.593 | .553 | Not Supported  |
| Comp<--- EC | 0.726 | .166 | 5.154 | \*\*\* | Supported |
| Mining  |
| Comp<--- DC | 0.653 | .191 | 4.199 | \*\*\* | Supported  |
| Comp<--- EC | -0.165 | .169 | -1.061 | 0.289 | Not Supported |



**Figure 3**. Moderator effect of path diagram

Grounded in the dynamic resource-based view theory, the research examined the role of entrepreneurial capabilities (EC) on SMEs' sustainable competitiveness and dynamic capabilities, as well as the role of dynamic capabilities (DC) on the path between entrepreneurial capabilities and competitiveness. To enhance the competitiveness and performance of SMEs having only an entrepreneurial orientation is not enough; entrepreneurs need to have the capability to explore more opportunities (Adjabeng et al., 2022). The EC can be categorized as general and international EC (Faroque et al., 2020). However, in our research, we have concentrated only on international EC with four constructs (Autonomy, innovativeness, risk-taking, and pro-activeness). Despite, recent academic emphasis on researching EC, DC, and competitiveness limited studies have been conducted in this area. This paper contributes to the knowledge by linking EC (autonomy, risk-taking, pro-activeness, and innovativeness) with DC (sensing, reconfiguration, integration, and organizational learning) and competitiveness (asset, performance, process adaptability, and flexibility) and the mediating role of DC was assessed on the path diagram, particularly from the SMEs perspective in developing countries. Thus, the results of this research enhance the existing literature by providing empirical evidence on the significance of EC to DC, and SMEs competitiveness, confirming that EC can be considered as the antecedent of DC.

The research results, as indicated in Table 4 with the four hypotheses, were found to be supported theoretically. EC with its components of autonomy, risk-taking, pro-activeness, and innovativeness has a significant effect on SMEs' competitiveness and dynamic capabilities, verifying previous findings that underscore the importance of EC on the sustainable SMEs' competitiveness (Vu, 2020; Adjabeng et al., 2022; Hu et al., 2022). Moreover, the findings demonstrated the strong effect of EC on DC on SMEs' competitiveness. Likewise, the results confirm DC mediates the relationship between EC and SMEs' competitiveness and show EC can work as an antecedent of DC. These results confirm previous findings (Sijabat et al., 2021) that explain, SMEs' competitiveness and their EC are positively and significantly affected by their DC. Another contribution of this research is addressing the recommendations of (Abbas et al., 2019; Khouroh et al., 2020) to collect empirical evidence of EC's role in SMEs competitiveness from other countries.

These empirical findings have significant implications for academic and business communities. The role of EC on SMEs' sustainable competitiveness is positive and significant according to the empirical evidence in this research. This result is in line with previous research (Vu, 2020; Adjabeng et al., 2022; Hu et al., 2022) that explains Entrepreneurial capability has the power to change the competitiveness game of the firm in a volatile and dynamic market. Hence, EC acts as a main driving force for SMEs in their performance and process adaptability by nurturing opportunity-seeking, innovativeness, resourcefulness, and adaptability, to shape out for themselves and achieve sustainable competitiveness.

Furthermore, the empirical investigation confirms that the effect of EC on DC is positive and significant. This means that the EC of SMEs pushes them to continually pursue new opportunities, which in turn demands the development of DC to capture those opportunities. In general, EC delivers a clear vision and motivation for change, while DC provides the tools and processes to change these into realities through sensing and shaping opportunities in the business environment, taking advantage of identified opportunities before rivals, and adjusting resources, knowledge, and processes to fit the new market demand by reconfiguring its capabilities. By nurturing these, working in synergy with EC as an engine and DC as a gear, SMEs can have sustainable competitiveness in the dynamic business environment.

The impact of EC on SMEs' competitiveness is stronger when DC mediates it. This indicates that Entrepreneurial capabilities incorporate innovativeness, risk-taking, and pro-activeness. These capabilities help the SMEs to identify opportunities, develop new ventures, and adapt to market dynamism. However, having these does not guarantee sustainable competitiveness. When EC enables SMEs to generate innovative ideas and identify opportunities and then DC becomes critical for changing these ideas into reality through effectively sensing the current and future environment by scenario planning and by internal and external resource integration for the common goal of the firm. Overall, DC works as a tie, allowing SMEs to leverage their entrepreneurial spirit for sustainable competitiveness.

The concept of dynamic and entrepreneurial capabilities is similar globally; however, their role is different. Entrepreneurial capability can stimulate economic growth through new business openings, job creation, and product development from an emerging economy perspective. Dynamic capabilities enable these businesses to familiarize themselves with changing market conditions and remain competitive. These capabilities foster innovation in infrastructure and boost limited resources. However, the role of dynamic and entrepreneurial capabilities in the developed economy is important for maintaining the economy competitive at a global level.

The influence of DC and EC on SMEs can vary among different industry sectors due to the distinct traits, challenges, and opportunities specific to each sector. The impact of DC and EC on SMEs is significantly influenced by context, with variations observed across various industry sectors. Although both capabilities are important in all sectors, their relative significance and the specific forms can vary greatly. To achieve sustainable growth, SMEs must adapt to the unique requirements and opportunities present in their particular sectors. Industry dynamics affect competitive intensity, with some sectors being more competitive than others. The textile and apparel, food industry, and metal and wood sectors face significant competition and address this through production optimization and resource reconfiguration. Firms in sectors with rapidly growing markets have more expansion opportunities and increased competitiveness, such as in building material inputs. Conversely, firms in mature markets like mining may face greater challenges. Sectors that require a high initial investment and specialized knowledge can make it difficult for SMEs to sustain their competitiveness. Mining and chemical firms have limited market diversification, are more sensitive to economic cycles than innovation, and are dominated by large companies on their supply change that hinders their DC and EC.

The SMEs found in Tigray are currently struggling for survival. Therefore, for firms to sustain their business, investing in enhancing their dynamic and entrepreneurial capabilities is very crucial. These capabilities help to enable them for rapid adoption, innovation, and resourcefulness in the face of vast challenges. Since firms equipped with dynamic and entrepreneurial capabilities benefit from flexibility and resilience, innovation and creativity, and job creation and economic growth.

1. **CONCLUSION**

This research was conducted on the SMEs found in Ethiopia (Tigray –region) running their business in the manufacturing sector, from the developing countries' perspective. It aimed to study the effect of EC on DC and SMEs’ sustainable competitiveness. Additionally, it assessed the mediating role of DC between EC and competitiveness. A total of three direct and one indirect hypothesis were tested using a structural equation model based on the survey data collected from 459 SMEs. The empirical evidence indicated that the four hypotheses tested were supported.

The research result revealed that EC is very important for the SMEs' sustainable competitiveness. SMEs, which have entrepreneurial autonomy, innovativeness, pro-activeness, and risk-taking, can, achieve sustainable competitiveness through high productivity, and installing adaptable and flexible working processes for any new changes. Likewise, DC positively and significantly mediates the path relationship between EC and competitiveness. This means, EC can be taken as the ancestor of DC depending on the result. In the empirical evidence, the correlation between the factors is too strong, which means that firms failed to act proactively for any change and business trends and failed to innovate new product features. This leads them to fail to sense the business environment and reconfigure their internal and external resources to fit the change. In other words, they cannot sustain their business without combining these internal capabilities. Additionally, even though the role of DC and EC has a significant effect on the SMEs' competitiveness, it is not uniform for all sectors. SMEs faced with customer preference quickly (textile and apparel) are more benefited through their DC and EC than firms operating in matured market growth. Finally, the research finding signifies an empirical result, which adds to the entrepreneurial literature by providing that, entrepreneurial capabilities can indirectly affect the SMEs' sustainable competitiveness of manufacturing firms through dynamic capabilities. In general, this paper's findings will help SME owners and managers understand how to adapt to changing conditions, innovate, and create new opportunities for job creation towards general economic growth with sector-specific.

Notwithstanding the findings of the valuable perceptions and insights, it has a few limitations that should be addressed. Primarily, the nature of the survey was cross-sectional, which prohibited respondents from more exhaustive analysis of appropriate themes. Hence, to have new understandings and broad inputs, future studies should use combined qualitative and quantitative data collection systems. Next, this research was done focusing on the manufacturing sector only from the emerging economy perspective. The upcoming research should widen in other developing countries and other economies.

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