Dynamic Capabilities for Sustainable Competitiveness of Small and Medium Enterprises (SMEs): Mediating Role of Innovation Capabilities and Product Quality

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Abstract

The role of internal capabilities in the competitiveness of Small and Medium Enterprise (SME) is not well documented in the literature from the perspective of an emerging economy, nor is the role of dynamic and innovation capabilities in their competitiveness conclusive. Therefore, this research examines the impact of dynamic and innovation capabilities, and product quality on SME competitiveness. Data were collected using a survey from 459 SMEs, operating in the manufacturing sector. Structural equation modeling was employed to analyze the proposed model's research hypotheses and path relationships. The result of the study revealed that a firm's innovation capabilities, product quality, and competitiveness are significantly and positively affected by its dynamic capabilities. Moreover, the path between dynamic capabilities and competitiveness is partially mediated through innovation capabilities. However, product quality failed to mediate the path between dynamic and innovative capabilities and competitiveness. The research findings provide practical implications for policymakers in designing strategies that focus on internal capability developments. In addition, it draws some managerial attention to investing in internal capability focusing on continuous learning and internal and external resource integration to

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drive customer satisfaction for the sustainable competitiveness of SMEs.

Keywords: *Dynamic capabilities, Innovation capabilities, product quality, small and medium enterprises, SME, Competitiveness*

1. Introduction

Small and Medium Enterprises (SMEs) play a critical role in economic and social development and are essential to every economy, including developing and least-developed countries (LDCs) (Ganne et al., 2022; Neagu, 2016). However, despite their positive influence on the continent's development, SMEs in Africa continue to face tremendous and restrictive obstacles that impede their long-term survival and contribution to the continent. As a result, the mortality rate of SMEs in Africa is very high which shows 5 out of 7 businesses fail in the first year of establishment (Bosma et al., 2019; Bushe, 2019).

The competitiveness of SMEs can be affected through internal and external factors (Alamineh, 2020). However, firms that can exploit and mobilize their internal resources and capabilities have better sustainable competitiveness than others (Adjabeng et al., 2022). Several studies (Al-tit & Omri, 2019; Gumel & Bardai, 2023) have listed some internal factors that impact the SME competitiveness. Accordingly, the dynamic capability (DC) and innovation capability (IC) stand first and second, respectively. However, the internal capabilities' role in the firm's competitiveness, especially in developing countries, is not well studied(Novillo-Villegas et al., 2022).

There is a growing research trend on dynamic capability and firm competitiveness, but there is no clear answer to why SMEs fail (Teece, 2014). Dynamic capability indicates a firm's ability to integrate, sense, and re-configure its internal and external competencies to overcome the very rapidly changing business environments (Teece et al., 1997). Over previous decades, several

empirical studies have been conducted to test the impact of DCon firm competitiveness (Eikelenboom and de Jong 2019; Ferreira, Cardim, and Branco 2018; Hernández-Linares, Kellermanns, and López-Fernández 2021; Rashidirad and Salimian 2020) and these indicate that dynamic capabilities have a significant impact on SME competitiveness. In contrast, the findings of Sijabat et al., (2021) show that DC has an insignificant effect on SME competitiveness.

In the literature, the indirect influence of DC on a firm's competitiveness is examined. In line with this, research findings revealed that dynamic capabilities give sustainable competitiveness for firms when it is mediated by innovation capability (Pundziene & Bouwman, 2020). In contrast, in a very dynamic environment, the mediating role of innovation capability on the DC and SMEs competitiveness path is insignificant (Zhou et al., 2019). Thus, the effect of DC on SME competitiveness through innovation capability is not consistent and it has not been studied in-depth (Pundziene & Bouwman, 2020). Moreover, the research conducted so far on this issue specifically in developing countries is minimal and limited (Novillo-Villegas et al., 2022).

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 reason for the failure of their competitiveness is internal or 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 SME competitiveness is not well documented from the emerging economy perspective. Moreover, the node between dynamic, and innovation capabilities of SMEs with their competitiveness is not conclusive and consistent.

To fill these gaps, this paper aims to empirically investigate, the effect of dynamic capability (sensing, learning, integration, and re-configuration capabilities) on the competitiveness of SMEs (asset, performance, and process) and, the mediating role of innovation capability (IC) (process, product, marketing, and organization) between the relationship from a developing countries' perspective. Moreover, the present study utilized and extended the existing dynamic capabilities and innovation capabilities theories to explicate the link between dynamic capabilities, innovation capability, and sustainable firm competitiveness.

Finally, this research has answered the research question: *What is the node between dynamic capabilities and sustainable competitiveness of SMEs, and the role of innovation capability in the pathway between them?*

2. Research Methodology

2.1 Study areas and research design

The target population for this study focused on the manufacturing enterprises found in Ethiopia's Tigray Regional State. These enterprises, which are categorized as SMEs, were selected because they have a production potential for manufacturing products and account for a significant amount (more than 50%) of Tigray's manufactured outputs. A cross-sectional survey designwas employed since data from a target population were only gathered once. The design is considered effective and efficient because it allows for the collection of a significant amount of data within a short period. Cross-sectional surveys, while powerful tools for gathering data, often face various constraints that can impact their reliability and validity. Stratified sampling methods are the key solution for any bias in the analysis (Pourhoseingholi et al., 2012). Data was then collected through a structured questionnaire. The questionnaire covers a wide area and gives a large amount of information in a short period (Saunders et al., 2019). In addition, it protects respondents and the

researcher from any potential bias (Kim et al., 2016). Additionally, to overcome these problems, the researchers prepare proper sampling, optimal sample size, and a well-structured questionnaire. And this follows with effective data collection, and addressing the biases (Angelini et al., 2020; Capili, 2022)

2.2 Sample and data collection

The target population of this study comprised 3262 manufacturing SMEs in the selected cities and the raw data list was obtained from the regional authority office. The manufacturing SMEs in the six economies (wood and metal, textile and apparel, mining, chemical and packaging, agro-processing, and construction inputs) are the target population. The sample size was determined based on the Taro Yamane formula (Uakarn et al., 2021)with a target population of 3262 SMEs, a confidence level of 95%, and a 5% margin of error and 29% contingency, which resulted in 459 manufacturing SMEs as a sample size. Before the actual survey took place, the questionnaire was pre-tested by six SME managers, two scholars from the Department of Foreign Languages and Literature, two scholars from the Department of Tigrigna, and five university lecturers. It was then amended based on their feedback and to make sure that the content and design would be simple for the respondents to understand.

Proportional stratified sampling was employed to have a representative of SMEs from each city as indicated in **Error! Reference source not found.**. In this methodology, the population was divided into smaller, more homogenous subgroups (strata) based on the economy they operate. Additionally, the operating sector was divided into small and medium enterprises. Moreover, the enterprise's locations are different in each city and the samples were allocated proportionally from each location and business they operate. Accordingly, the number of samples was calculated from all locations, the business they operate, and the firm size. Thereafter, simple random sampling was used to pick up SMEs from the cities and

include them in the data collection. Therefore, this gives accurate estimates and ensures proper population representation. Data was collected through a structured questionnaire since it covered a wide area and gave a large amount of information in a short period (Saunders et al., 2019). In addition, it protects respondents and the researcher from any potential bias (Kim et al., 2016).

Table 7: Number of samples taken in each city from small (S) or medium (M) firms by business types

Business types		Location							Total
		Shire	Axum	Adwa	Adigrat	Wukro	Mekelle	Maichew	
Metal and woodwork	S	6	9	7	15	8	68	3	116
	M	3	7	4	4	2	19	1	40
Textile and apparel	S	8	5	6	9	7	31	2	68
	M	1	1	3	2	0	9	0	16
Agro-processing	S	2	3	3	3	3	21	1	36
	M	2	3	2	1	1	4	1	14
Building input	S	3	3	3	9	10	65	2	95
	M	1	2	1	2	1	12	1	20
Chemical and packaging	S	1	1	1	1	1	7	1	13
	M	1	1	1	1	0	8	0	12
Mining	S	4	4	2	6	1	3	1	21
	M	2	1	2	1	1	1	0	8
Samples taken	S	24	25	22	43	30	195	10	349
	M	10	15	13	11	5	53	3	110

Data was collected from January 2024 to March 2024. After administering 459 questionnaires, 11 of these were not returned, five were rejected during data cleaning for double filling for the same question, two were deleted from SPSS since their standard deviation

was zero, and the valid responses collected were 441, which equates to a response rate of 96.1%.

3. Result and Discussion

3.1 Results

The research question has been addressed by leveraging the empirical data collected from 459 SMEs in the manufacturing sector and analyzed using structural equation modeling (SEM). By answering the above research question, this study encompasses the dynamic and innovation capabilities literature with product quality and firm competitiveness. The paper tested the empirical impact of dynamic capabilities on SME competitiveness from the developing countries perspective, which has been neglected so far in the literature. It further investigated the mediating function of innovation capabilities and product quality on the path relationship of dynamic capabilities and SME competitiveness.

The selected instruments, variables, and scales used were adapted from pre-existing studies (Breznik & Lahovnik, 2016; Hernández-Linares et al., 2021; Lin & Wu, 2014a), translated, and adapted the language so that the questions were more perceptible to the specific respondents. The measurement items were selected because they fit with the conceptual model of the current study (content validity) and they were found to have adequate previous reliabilities.

Table 8: Descriptive statistics, Factor loadings

Construct		Items	Factor loading
Dynamic capabilities	Sensing	DCs1	0.802
		DCs3	0.758
		DCs2	0.843
	Integration	DCi3	0.808
		DCi4	0.736
	Reconfiguration	DCr4	0.701
		DCr3	0.755

		DCr2	0.739
		DCr1	0.766
Innovation capabilities	Product	ICpd1	0.834
		ICpd2	0.853
		ICpd3	0.838
		ICpd4	0.74
	Marketing	ICm2	0.71
		ICm4	0.71
		ICm1	0.796
	Process	ICpr1	0.823
		ICpr2	0.844
		ICpr3	0.736
Product Quality		PQ4	0.799
		PQ3	0.753
		PQ2	0.77
		PQ5	0.746
Competitiveness	performance	Cpo4	0.728
		Cpo1	0.726
		Cpo2	0.728
		Cpo6	0.76
	Asset	Cas4	0.762
		Cas5	0.851
	Process	Cpr4	0.776
		Cpr3	0.764
Second order constructs		Integration	0.855
		Sensing	0.875
		Reconfiguration	0.919
		Asset	0.753
		Process	0.892
		Performance	0.878
		Product	0.959
		marketing	0.777
		Process	0.949

Dynamic capabilities were measured with 17 items derived from the literature (Breznik & Lahovnik, 2016; Hernández-Linares et al., 2021; Lin & Wu, 2014a). Innovation capabilities (Wang & Ahmed, 2004) were measured with 16 items under product, organizational, process, and market, and competitiveness (Ambastha & Momaya, 2004; Lafuente, 2019; Wu, 2009) was evaluated in 19 items across process (process flexibility and adaptability), and performance (productivity and growth) with a total of 47 items. The variables with less than 0.7 factors loading were removed from the scale (Hair et al., 2011). Finally, 31 items remain, five items from organizational learning, 5 items from the asset, and 4 items from organizational innovation failed to score above 0.7-factor loading.

3.2 Data analysis and results

Confirmatory factor analysis (CFA) was used in the structural equation modeling to determine fit indices, reliability, and validity of the data.

3.2.1 Exploratory Factor Analysis (EFA)

Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy test was done for the appropriateness of data for conducting factor analysis. The KMO value of the data should not be less than 0.5 to go for further analysis (Farrukh et al., 2019). While both Cronbach's alpha and Composite Reliability (CR) are valuable tools for assessing internal consistency, CR is generally considered a more robust measure, especially in the context of CFA. Accordingly, CR was used to evaluate the internal consistency and scale reliability of the constructs with a recommended threshold of 0.7 and above (Hair et al., 2011). The result for the construct reliability, 0.851 was the minimum value for CR as shown in

Table 9. Additionally, Cronbach's alpha value based on the average standard items was 0.969 which indicates the reliability of the factors is good.

Table 9: Descriptive Statistics

Construct	KMO	Cranach's alpha	CR	(AVE)
Dynamic capability	0.916	0.919	0.914	0.780
Product Quality	0.861	0.863	0.851	0.589
Innovation capability	0.941	0.934	0.926	0.808
Competitiveness	0.942	0.933	0.880	0.711

The results from

Table 9 designate that all the constructs fulfilled the expected threshold value; hence, construct reliability is acceptable. Additionally, the internal consistency was evaluated using Cranach's alpha, which points out the internal reliability of the latent constructs. The threshold value recommended for Cranach's alpha is 0.7 (Pundziene & Bouwman, 2020) and the result indicates that all the constructs satisfied the threshold with good construct reliability.

Furthermore, the convergent validity is also examined to evaluate whether the two measures of constructs that theoretically should be associated are related. The association or the link between the constructs can be measured through the average variance extracted (AVE) (Hair et al., 2011), and the suggested threshold value of AVE is 0.5 or above (Fornell & F.Larcker, 1981). The AVE values ranged from 0.589 to 0.808, and therefore convergent validity was achieved in the data.

3.2.2 Discriminant validity

The discriminant validity test is the opposite of convergent validity, which aims to assess if there is no relationship between the measurements. It aims to show the measures that were made up to assess the construct and, in reality, evaluate the anticipated construct and that the construct was not taken with other measures (Henseler et al., 2015). As indicated in Table 10 and (Fornell & F.Larcker, 1981) criteria, the results fulfill the richness of the data and the discriminant validity.

Table 10: Discriminant validity

		1	**2**	**3**	**4**
1	Dynamic capability	**0.883**			
2	Product Quality	0.479	**0.767**		
3	Innovation capability	0.871	0.459	**0.899**	
4	Competitiveness	0.795	0.564	0.821	**0.843**

The model fit analysis was evaluated before proceeding to further analysis. No strict thresholds for these statistics currently exist, but the following general guidelines have been suggested in the literature: Tucker–Lewis Index (TLI), Incremental Fit Index (IFI), and Comparative Fit Index (CFI) values above 0.9, CMIN/DF<3 and Root mean square error of approximation (RMSEA) values less than 0.08, are generally interpreted as indicators of good model fit (Chang & Chen, 2020). Accordingly, the results indicate a good model fit with CMIN/DF values of 2.15, RMSEA scores of 0.51, TLI comes 0.933, CFIof 0.94, andIFI scores of 0.94.

3.3 Structural model analysis

When the measurement validation is over the structural model analysis is conducted through hypothesis testing. Structural equation modeling is a multi-variant analysis method for estimating and testing causal models (Angelini et al., 2020). The process of this specific model started by choosing observed and latent variables according to prior knowledge and setting the equivalent measurement and structural model. The specific observed sample data are put into the model structure that has been finalized, and the coefficients then generated. This model is tested and evaluated to define whether the hypothetical model projected by the authors can describe the realistic subject between variables. The structural model was evaluated using bootstrapping (Hair et al., 2019) with 5000 to examine the proposed relationship as shown in **Error! Reference source not found.** 1 and the direct and indirect hypothesis results are presented in Table 11.

Initially, the direct effect analysis confirmed that four out of five of the hypotheses were significant. The SME competitiveness was found positively and directly linked with DC (β=0.795, p=0.02), IC (β=0.533, p<0.001), and PQ (β=0.211,p<0.001). Moreover, DC was positively related and significant with IC (β=0.871, p<0.001), and PQ (β=0.479, p=0.018). However, IC was not possible to take as a predictor of PQ as the result (β=0.174, p=0.193) showed p>0.05. The next mediating role (indirect hypotheses) was further analyzed as

shown in Table 11. The result revealed that the impact of DC on SMEs competitiveness was observed through IC and PQ. Thus, DC's role in SME competitiveness through PQ is positive but not significant (β=0.152, p=0.266), and the impact of IC on SME competitiveness when it is mediated by PQ is positive but not significant (β=0.037, p=0.225). Here, the results confirm that DC and IC cannot work as antecedent variables of PQ for SME competitiveness. However, the impact of DC on SME competitiveness when it is mediated by IC is positive and significant (β=0.534, p=0.01).

Table 11: Direct and Indirect Hypothesis results summary

			Std. estimate	SE	C.R.	P	Result
Comp	<---	DC	0.795	0.097	2.33	0.02	Supported
Comp	<---	IC	0.533	0.066	4.384	***	Supported
Comp	<---	PQ	0.211	0.039	4.229	***	Supported
IC	<---	DC	0.871	0.096	13.626	***	Supported
PQ	<---	DC	0.479	0.151	2.374	0.018	Supported
PQ	<---	IC	0.174	0.098	1.302	0.193	Not supported
DC=>PQ through IC			0.152			0.266	Not Supported
IC=>Comp through PQ			0.037			0.225	Not Supported
DC=>comp through IC			0.534			0.01	Supported

Note: *** is for P<0.001

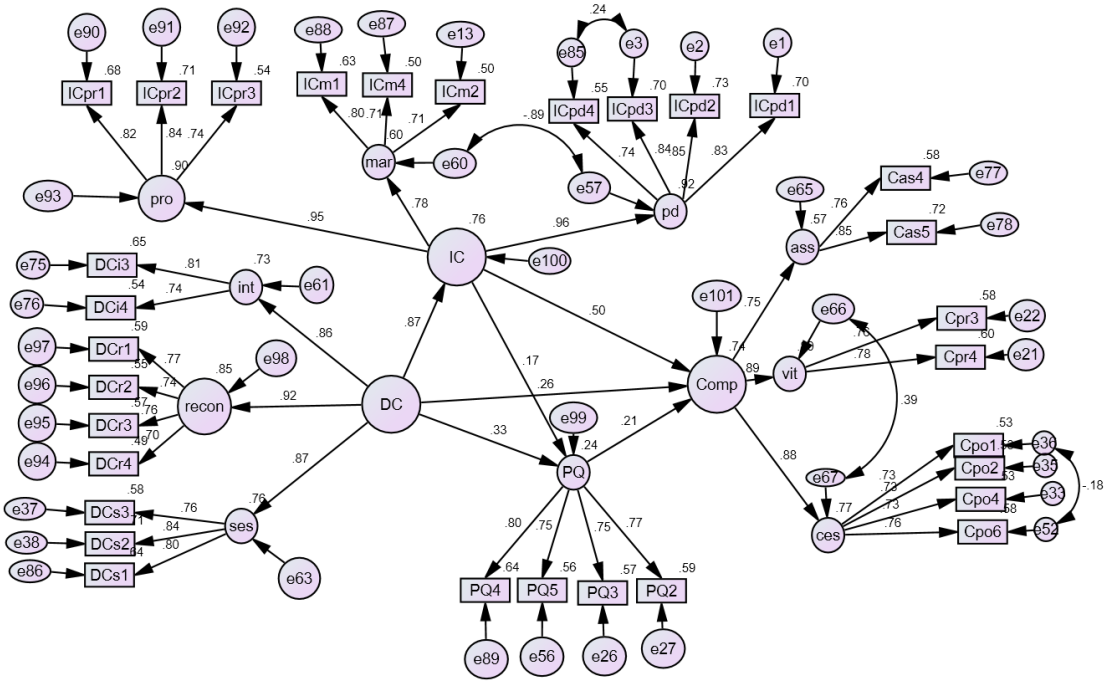

Figure 4: Structural model analysis results

In addition, the structural equation modeling has been evaluated with the coefficient of determination (R^2). The threshold value ranges from 0 to 1, with a higher value indicating a greater explanatory power (Hair et al., 2019; Ozili, 2023). R^2 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, an R^2 at 0.25 is considered weak, 0.5 is moderate, and 0.75 is considerable (Hair et al., 2019; Ozili, 2023; Sarstedt et al., 2022). Depending on the field of study, or if most of the explanatory variables are statistically significant, an R^2 at 0.1 is acceptable (Hair et al., 2019; Ozili, 2023). Thus, the R^2 for SME competitiveness is 0.735 which means 73.5% of the SME sustainable competitiveness variations are explained by dynamic capabilities, innovation capabilities, and product quality. Likewise, the R^2 value for innovation capabilities was 0.759 (75.9%) and this indicates

thatdynamic capabilities can explain more than 75% variation of the SMEs' innovation capabilities.

Table 12: Quality of structural model (R^2)

Factor	R^2
IC	0.759
PQ	0.237
Comp	0.735

Furthermore, dynamic and innovation capabilities explained 0.237 (23.7%), of the SME product quality variations which lies in the weak category. This result aligns with the path coefficient analysis of the factors that affect product quality (table 4). The path analysis result confirms that the dynamic capabilities have a positive and significant impact on the PQ but are too weak. The innovation capabilities have an impact on the SME product quality but are not significant. Hence, dynamic and innovation capabilities explaining the power of SME product quality are too weak.

3.4 Discussion and Implications

3.4.1 Discussion

The main aim of this research is to test the node between dynamic capabilities, innovation capabilities, and product quality on the competitiveness of SMEs; further, to investigate the mediation effect of innovation capabilities and product quality on the relationship between dynamic capabilities and SME competitiveness. Although there are some studies conducted on the dynamic capabilities and SME sustainable competitiveness, the perspective of developing countries has not been addressed well (Novillo-Villegas et al., 2022). Moreover, the empirical evidence on the role of internal capabilities on competitiveness is very limited (Pundziene & Bouwman, 2020). Accordingly, researchers (Fan et al., 2021; Mansouri et al., 2022; Sulistyo & Ayuni, 2020) recommend continuing the empirical evidence on other areas. Conversely, the sensing capability of

dynamic capability has an insignificant impact on competitiveness of SMEs (Hernández-Linares et al., 2021). Another important consideration in this paper is the mediating effect of product quality on dynamic capabilities and SME competitiveness, which is almost overlooked in the literature. Therefore, this study examined the node between dynamic capabilities (sensing, reconfiguration, organizational learning, and integration) and SME competitiveness and the mediating role of innovation capabilities (market, process, organizational, and product) between DC and competitiveness.

The research results reveal empirical evidence that dynamic capabilities have a significant impact on sustainable competitiveness of SMEs. The empirical result confirms previous findings (Chumphong et al., 2020; Ferreira & Coelho, 2019; Hernández-Linares et al., 2021; Khalil & Belitski, 2020; Kurnia Fitriati et al., 2020; Mansouri, Malainane, et al., 2022) that showed the DC directly and positively affected SME competitiveness. SMEs with high DC can adapt and flourish in a changing environment. This is very important for SMEs as they have fewer buffers than large companies for unexpected shifts in the market. Their strong sensing capabilities enable them to identify opportunities and react to threats quickly before their rivals. This endeavor can further support them to continuously improve their product, process, and service, which allows them to stay relevant and competitive in the fast-paced environment through their learning capabilities. Moreover, it helps them to be flexible and equipped with good reconfiguration capabilities for their internal and external resources to adapt to change.

This paper confirms this in contrast to previous research findings (Sijabat et al., 2021) that indicated dynamic capabilities have an insignificant impact on SMEs' competitiveness. The capabilities of firms for frequent environment scanning, periodical business environment review, and product review with customer preference contribute to firms' dynamic capabilities, enhance innovation

capabilities, and in turn boost product quality as a base for their sustainable competitiveness.

This paper's results point out that DC has a positive and significant effect on IC and PQ. The analysis is in line with the previous findings for IC (Hermawati & Gunawan, 2019; Kurnia et al., 2020) for PQ (Ferreira et al., 2020, 2021). DC can work as the supercharger of IC by enabling to fueling of new ideas and investigating and reconfiguring traditional resource flexibility for innovation. The DC influences SMEs to improve responsiveness to customer voices depending on the environmental sensing analysis and effective resource allocation through their reconfiguration capabilities to achieve good product quality. A research area neglected in the literature on the relationship between product quality and SME competitiveness has been addressed in this research. The result shows that SME competitiveness is also positively and significantly affected by product quality and innovation capabilities. SMEs with strong IC can boost their sustainable competitiveness. This result is similar to the previous research findings (Heenkenda et al., 2022; Huang, 2014; Purwati et al., 2021; Sulistyo & Ayuni, 2020b) showing IC had a positive and significant impact on SME competitiveness. IC enables SMEs to improve their product's aesthetics, performance, durability, reliability, and features before their rivals can; however, innovation capabilities cannot be taken as the forerunner of product quality.

The relationship between PQ and SME competitiveness has not been discussed well in the literature, especially from the SME perspective. The empirical evidence in this paper confirms that PQ is crucial for SME competitiveness. High product quality is considered a core for SME competitiveness, as it will bring high customer satisfaction and create loyalty, reduce cost, and reputation for their products. Additionally, SMEs with higher dynamic capabilities have a chance to benefit from their products in their performance, aesthetics, features, durability, and reliability.

The impact of IC on the PQ of SMEs was further investigated in this study. The empirical results reveal that IC has a positive impact but is not significant on PQ. This result contradicts the previous findings (Gupta, 2017; Lekhanya et al., 2017; Tali, 2021), that IC has a positive and significant impact on PQ of SMEs. In reality, innovation capabilities play a critical role in SME product quality improvement (Tali, 2021); however, when firms fail to understand the concept of innovation, and instead operate focusing on cost-cutting, and face resource scarcity, the role of innovation may not be significant.

The research findings further confirm that the effect of dynamic capabilities on manufacturing competitiveness of SMEs is partially mediated by innovation capabilities. Dynamic capabilities through its sensing, reconfiguration, and integration capabilities augment the firm's innovation capacities through its product, process, and market. Hence, this research proved empirically the concepts of Teece (2020), who indicated that dynamic capabilities give importance through the integration, and reconfiguration of their entire operations andhave an indirect impact on the firms' competitiveness mediated by innovation capabilities. Therefore, theoretically, this paper supports that dynamic capabilities can work as the background of the firm's innovation capabilities.

This finding also contradicts a previous report (Zhou et al., 2019)that innovation capabilities may mediate the dynamic capabilities and firms' competitiveness. The empirical investigation of the indirect role of DC on SME competitiveness mediated by innovation should benefit from other countries' research (Ferreira & Coelho, 2019). Thus, this research finding proves that innovation capabilities can partially mediate the effect of dynamic capabilities on SMEs competitiveness. SMEs capable of environmental sensing proactively, capable to reconfigure their resources to the new production system, and capable to interrelate the firms' actions to its members properly

can develop new products and marketing systems by adjusting their working process accordingly. This leads to overcoming the dynamic business environment through flexible and adaptable processes, high productivity, and committed employee performance.

The empirical evidence of the paper draws that product quality failed to mediate the role of dynamic capabilities on the sustainable competitiveness of SMEs. In other words, even though the role of dynamic capabilities is significant for SMEs in introducing a new product, marketing strategy, and flexible working system, dynamic capabilities cannot act as an antecedent of product quality.

3.4.2 Theoretical implication

This study encompasses the dynamic and innovation capabilities theory from a developing country perspective. The research finding indicates confirmation that SMEs capable of sensing the business environment, reconfiguring, and integrating their internal and external resource are the forerunners for their product, process, and marketing innovation. Additionally, the research addresses the forgotten link between innovation and dynamic capabilities and product quality as well as the role of product quality on the competitiveness of SMEs. The findings of the research reveal that product quality is positively affected both by dynamic and innovation capabilities. However, the impact of IC on PQ is not significant and is not in agreement with previous findings (Ginting & Sembiring, 2018; Gupta, 2017; Lekhanya et al., 2017; Tali, 2021). Additionally, PQ fails to mediate DC and IC with sustainable competitiveness of SMEs. A further contribution of this paper is clarifying the missing link between the dynamic capabilities and SME competitiveness. This proves that dynamic capability has a positive and significant effect on sustainable competitiveness of SMEs if it is mediated by innovation capabilities. However, product quality cannot act as the antecedent for both dynamic and innovation capabilities. Besides, the dynamic capabilities

have a significant effect on both product quality and innovation capabilities.

3.4.3 Policy implication

Government policies have significantly influenced ability of firms to achieve sustainable competitiveness. Currently, government policies focus on encouraging SMEs to sustain their competitiveness mostly on external factors. This research points out that the focus for policymakers should include enhancement of internal capabilities and be designed to encourage innovation and R&D and to promote skill development for environmental scanning, resource reconfiguration, and process integration. Furthermore, leading the sectors through furnishing R &D for technological advancement and incorporating a creativity culture and risk-taking is crucial. This will help individuals with the necessary mindset to approach challenges creatively and generate innovative solutions. Platforms promoting collaboration between higher education, and research institutions help to foster open innovation and new product development. Additionally, the current SMEs are going to transform their business into big companies. Accordingly, their system and products should exercise how to fulfill the quality standard values and systems installed on the national level. This platform is very important for the sustainability of their business and growth.

3.4.4 Managerial implication

The research finding has important implications for SME managers to sustain their company's competitiveness. Dynamic capabilities are essential to empower firms to continuously learn, innovate, sense, reconfigure, and integrate their strategies and operations in response to the very shifting and dynamic business environment. Accordingly, managers should focus on training their operatives to sense change, execute decisions under doubt, and reconfigure tactical resources. Additionally, managers should shape organizational practices and evaluate the dynamic capabilities of their managers continuously.

Likewise, resource configuration is crucial to sustaining their competitiveness. Hence, managers/ owners should focus on exploring cross-functional collaborations, implementing flexible resource management, and encouraging the unlocking of new possibilities from the existing assets.

A firm's innovation capabilities help to develop unique products, services, and processes that stand out from competitors. This will help to attract new customers, give premium prices, and bring brand loyalty. Hence, the managers will be better if they work focusing on culture and people (empowering teams, investing in talent development, and promoting innovation culture), process and structure, and external environment (collaboration and deep customer understanding). Furthermore, today's success is not a guarantee for tomorrow's sustainability, so owners and managers should use scenario planning to identify future trends, invest in R&D activities, and monitor the innovation landscape to ensure that their company remains at the forefront.

4. Conclusions, and future research perspectives

This research aimed to study the effect of dynamic capabilities on innovation capabilities, product quality, and competitiveness of SMEs. It further examined the mediating role of innovation capabilities and product quality between dynamic capabilities and SMEs' competitiveness. The dynamic and innovation capabilities were operationalized as a second-order construct containing 4 first-order factors, and product quality was taken as a first-order factor in the analysis. Using the structural equation modeling 9 hypotheses were tested based on the survey data collected from 459 SMEs running their business in the manufacturing economy.

The result indicates that six out of the nine hypotheses were supported. The result proves that innovation capabilities can mediate the relationship between dynamic capabilities and competitiveness.

This means SMEs that have high dynamic capabilities also develop very strong innovation capabilities and are competitive. Likewise, dynamic capabilities can be taken as the antecedent of innovation capabilities and product quality. The role of innovation capabilities and product quality in SME competitiveness was crucial. However, product quality cannot act as a precursor for dynamic capabilities impact towards SME competitiveness. Furthermore, innovation capabilities have an insignificant impact on product quality. Additionally, the co-relationships between the factors are highly correlated. Thus, if SMEs fail to sense the environment, integrate their internal and external resources, and cannot introduce new products and marketing strategies with flexible and adaptable processes, their sustainability is questionable. Besides, if SME capability to change the voice of customers to framed product parameters is weak the firms will not have sustainable competitiveness. The research contributes to the dynamic capabilities literature by presenting that dynamic capabilities indirectly affect the competitiveness of manufacturing firms through innovation capabilities.

As with other research findings, this paper has some limitations. The study was based on the data collected from one country - Ethiopia - and with manufacturing economy only. Hence, other countries with similar development to Ethiopia and those in Asia may be areas of future study. Second, innovation capabilities and product quality were considered as the mediating factors between dynamic capabilities and competitiveness grounded on the literature. Taking other potential factors as mediating factors may be potential research in the future.

Granting our research discourses several significant issues associated with product quality, dynamic, and innovation capabilities, and SME competitiveness, future studies are expected to add an extra explanation of other variables of dynamic capabilities. Furthermore, the mediating role of product quality for innovation capabilities of SMEs towards their competitiveness is not significant, which

contradicts other findings and this needs to be examined empirically in the future. Finally, this research finding is critical in creating a better understanding of the literature in the developing economy.

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Conflict of Interest

All authors declare that they have no financial or non-financial conflicts of interest on the publication of this research.

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