The Impact of Human Resource Training and Development Strategy on the Sustainable
Competitive Advantage: Testing the Mediating Effect of Strategic Agility
Tawiq Sarea Ali Basrda

The Impact of Human Resource Training and Development Strategy on the Sustainable Competitive Advantage: Testing the Mediating Effect of Strategic Agility

Tawfiq Sarea Ali Basrda*

Abstract

This study aims to investigate the impact of strategic agility on the relationship between human resource training and development strategy and sustainable competitive advantage. To achieve the objectives of this study, this study focused on a research population consisting of 450 medium-sized Yemeni manufacturing companies. A sample was selected based on the criterion of companies established for a minimum of 20 years. The participants in this study included both company managers and managers from the human resources department. Consequently, a total of 384 questionnaire were distributed, resulting in a final sample size of 304 surveys. Structural equation modeling (CB-SEM) was selected to test the relationships among the variables of the study. The results showed significant direct impact of the human resource training and development strategy on the sustainable competitive advantage. The mediating effect of the strategic agility was confirmed.

Keywords: Human Resource training and development Strategy; Strategic Agility; Sustainable Competitive Advantage; Medium-Sized Yemeni manufacturing companies.

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الملخص:

تسعى هذه الدراسة إلى معرفة أثر الرشاقة الإستراتيجية على العلاقة بين إستراتيجية تدريب وتطوير الموارد البشرية والميزة التنافسية المستدامة. ولتحقيق أهداف هذه الدراسة، تم اختيار شركات قطاع الصناعة التحويلية اليمنية المتوسطة الحجم كمجتمع للدراسة البالغ عددها ٤٥٠ شركة، إذ تم اختيار عينة منها حسب معيار الشركات التي مضى على تأسيسها عشرين عاماً، و بناءً على ذلك بلغ حجم العينة ١٩٢ شركة، إذ تم توزيع ٣٨٤ استبانة على المبحوثين المتمثلين في مدراء الشركات ورؤساء قسم إدارة الموارد البشرية. وبناءً على ذلك، بلغ حجم العينة النهائي لهذه الدراسة (٣٠٤) استبيان. وقد تم اختيار نمذجة المعادلة الهيكلية (CB-SEM) بوصفها تقنية إحصائية الأكثر ملاءمة لاختبار العلاقات بين متغيرات الدراسة، في ضوء نتائج التحليل أظهرت نتائج الدراسة وجود علاقة معنوية ذات دلالة إحصائية مباشرة بين كل متغيرات الدراسة، علاوة على وجود علاقة ذات دلالة إحصائية غير مباشرة بين إستراتيجية تدريب وتطوير الموارد البشرية والميزة التنافسية المستدامة في ظل وجود الأثر الوسيط للرشاقة الإستراتيجية، وعليه أكدت هذه النتائج صحة النموذج النظري المقترح للدراسة، بالإضافة إلى مساهمتها العلمية في سد الفجوة المعرفية فيما يتعلق بأهمية إستراتيجية تدريب وتطوير الموارد البشرية في تكوين ميزة تنافسية مستدامة لشركات الصناعة التحويلية اليمنية متوسطة الحجم.

الكلمات المفتاحية: إستراتيجية تدريب وتطوير الموارد البشرية؛ الرشاقة الإستراتيجية؛ الميزة التنافسية المستدامة ؛ شركات الصناعة التحويلية اليمنية متوسطة الحجم.

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Introduction

The world has been witnessing a dramatic development and change during the first decade of the current century which enforced business organization to operate in a very competitive and changing environment (Argyres et al., 2020). This enforces business organizations, especially the one operates in least-developed countries to create and adopt new and modern concepts, systems, and mechanisms to create more effective human resources power. This would help business organizations to raise their awareness toward their current status, create more proactive strategies and reduce business surrounding threats (Davis & DeWitt, 2021).

Thus, the Yemeni manufacturing companies are no different from the other companies in the least-developed countries. These companies encounter severe completion form the foreign companies who can dominate the local market due to their superior experience and capacities. Moreover, the position of the Yemeni manufacturing companies Including Medium-Sized Companies getting even

worse when trying to enter the other foreign and regional markets (*Yemen*, 2023). In summary, Yemeni manufacturing companies are facing many problems that could hinder their ability to dominate the local market and to penetrate the neighboring regional markets.

The local manufacturing sector is important for the Yemeni economy. The Total Gross Domestic Production in 2023 is $73 Billion Dollars. The contribution of the manufacturing industries to the Yemen GDP was around 4%. Manufacturing sector employed around 11.67% of the total labor force in Yemen (*Yemen*, 2023). These numbers show the importance of the manufacturing sector to the Yemeni economy.

Literature review proposed many theoretical and practical solutions for such challenges. For example, the theory of internal resources (Barney, 1991); core competencies theory (Hamel & Prahalad, 1996), and dynamic capabilities (Teece et al., 1997). All of these theories concentrated on capabilities and

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resources to build dynamic capabilities that could not be imitated by the competitors and consequently, creating sustainable competitive advantages (Liu et al., 2023). Narrowing down the scope of these solutions, many studies pointed to the important role of human resource management as a core competency that could enhance the ability to achieve a competitive advantage (Gharbi et al., 2022). Unfortunately, these studies didn't investigate the strategic level of tackling such problems nor the sustainability of the competitive advantage. On the other hand, many other studies discussed the role of human resource development and training in supporting the agility of human resource and achieving strategic agility in business organizations (Aminudin et al., 2024; Muduli, 2016).

Despite the fact that some studies investigated the role of strategic agility in creating sustainable competitive advantage (Pahuja & Dalal, 2012; Saha et al., 2017; Sajdak, 2015), a lot have to be done to investigate in depth the role of human resource development and training strategies on achieving

sustainable comparative advantages. One of the main gaps found in literature is the lack of investigating the indirect role of human resource development and training strategies on competitive advantage in the existence of strategic agility as a mediating variable. Hence, the current study tried to fill this gap by studying this indirect role in the medium-sized manufacturing companies operating in Yemen. As a result, this study is considered important as it determines the extent of the interaction between sustainable competitive advantage as the dependent variable and the Human Resource training and development Strategy and strategic agility as the explanatory variables. the study contributes to the body of knowledge in this field by providing practical evidence on how companies can meet the challenges of the competitions and improve competitiveness position to ensure their survival in such resource-constrained market of least developed countries.

This study is organized as follows: in the following section, we reviewed the most relevant literature to this study

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and derived the study's hypotheses. In the third section, we described the methodology and data collection process. Next, we presented the empirical results. And in the last section, we explained our general discussion, contributions, implications, limitations, and suggested future research.

1. Literature Review

1.1. Human Resource Training and Development Strategy

Human resource development and training strategy are defined as an organized activity intended to equip human resource with knowledge, improve and develop their skills and abilities, and change their attitudes toward adopting more effective strategies (DeNisi & Griffin, 2017). Others defined human resource development training strategy as the efforts of educating the workforce to acquire abilities and knowledge that related to their current and future job's duties (Adunlin et al., 2024). Human resource development and training strategy are related to the workforce abilities and skills that help them to

self-manage themselves and create healthier organizations (Maravelias & Holmqvist, 2016).

To achieve a good human resource development and training strategy, organizations should build it in align with their general strategic direction. Although human resource development and training strategy could be facing many problems (P. Davis & Amirbekova, 2019) , workforce and management staff knowledge and skills could be achieved through applying suitable training and development strategy that aligned with the main organization's strategy (Ganesh, 2019; Sabourin & Ayande, 2016). This alignment should be applied in a proper and balanced way that help organizations to absorb and cope with the surrounding complexity in the surrounding business environment and deal with future threats (Lee & Kim, 2018). Human resource development should be built and aligned with the main organization strategic direction. Due to extensive local and international competition and the constant change in the customers' needs and trends, human resource development and

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training strategy was given highly attention and importance in the manufacturing companies. Manufacturing companies considered human resource development and training strategy as a strategic approach that could help them in changing their employees' attitudes and develop their analytical skills and abilities to success in their job duties (Alwehabie, 2017). Human resource development and training strategy even taken wider scope in the manufacturing companies as it helps them to adapt to change in their business environment and to have more opportunity to survive in such competitive and dynamic environment (González et al., 2016). Moreover, development and training strategy is not only about developing new skills and abilities alone, but it is about changing and correcting the existed knowledge and skills toward better behaviors and attitudes (Noe et al., 2016). Furthermore, Reed et al. (2000) argued that training and development strategy is more than teaching knowledge and skills to produce higher quality products and services and it's a

tool to create anti-imitation philosophy inside the organization. In summary, human resource development and training strategy gained highly important attention in the manufacturing organization due to its multifactual role in crating sustainable competitive advantage.

1.2. Strategic Agility

In the existence of extensive competition and change in customers' trends, traditional organizations won't be able to deal with such threats. Consequently, strategic agility became the modern concept for organizations to improve their competitive abilities and face future threats (Jooss et al., 2024). Additionally, recognizing and adapting to changes will lead the organizations to achieve greater success by exploiting potential opportunities, create new sources of competitive advantage, and create the fundamental ability for survival. This is known as strategic (Felipe et al., 2016). Strategic agility could be applied by dynamically reconfiguring the organization and its strategies to be in line with the dynamic business environment. Organizations need to continuously anticipate, adapt to

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and interact with markets' trends and customers' needs, without compromising the organization's strategic vision (Barahma, ALi, Nashief & Al-Awlaqi, 2019).

Goldman and Nagel (1993) described strategic agility as the ability to operate profitably in an increasingly competitive environment as well as to deal with unexpected changes in customers' needs. According to Dove (2002), strategic agility is the ability to survive and continue to compete by focusing on knowledge and effectively and quickly responding to changes and developments, in terms of marketing new products or improving the production of the existing products. This can be done by enhancing operations, exploiting the opportunities and overcoming the threats. Lin, Desouza & Roy (2010) defined strategic agility as the ability to continuously adjust and adapt to the strategic directions of the business, as well as changing circumstances, through the creation of new products and business models and coming up with innovative ways to create value.

Literature explained more than one dimension of strategic agility. Doz and

Kosonen (2008) mentioned that there are three dimensions of strategic agility, i.e., strategic sensitivity, collective commitment and the flow of resources. Dabiri and Gholami (2015) indicated two dimensions of strategic agility: differentiation in innovation and differentiation in the market, Also suggest Jaworski & Kohli (2023) three dimensions of strategic agility, i.e., sensing agility, and decision-making agility, acting agility. This study adopts these dimensions to investigate the problem and meet its objectives. previous studies have indicated that there are no great differences in the views of researchers and writers about these dimensions. If any, it would be in an attempt to diagnose the situation to enable organizations to keep pace with changes and developments in the surrounding environment.

1.3. Sustainable Competitive Advantage

The concept of sustainable competitive advantage has become one of the most promising concepts over the last century, especially in the field of strategic management. Many scholars and practitioners have concentrated on a wide range of issues related to this concept (Huang et al., 2015). For

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example, Porter (1985) proposed that competitive strategies help in creating sustainable competitive advantage. Porter discussed the main competitive strategies through which organizations could obtain the lowest cost or cost distinction to achieve sustainable competitive advantage (Porter, 1985). Moreover, Beal (2001) considered that the traditional way of achieving sustainable competitive advantage depends on the environmental structure and overall competitive strategy. Barney (1991) is considered as one of the pioneers of the modern resource-based view (RBV) of sustainable competitive advantage. He pointed out that an organization is said to have a sustainable competitive advantage when it implements a value-creating strategy simultaneously with current and future competitors. It has also been pointed out that sustainable competitive advantage can be achieved when other organizations are not able to capitalize on the benefits of this strategy. Dickson (1992) believed that for an organization to achieve sustainable competitive advantage, it must learn how to create new features that can maintain its strategic leadership in the market and remain ahead of its competitors.

Hoffman (2000) pointed out that sustainability requires a new way of thinking and strategic intelligence that differs from the conventional way of thinking.

Hitt, Ireland & Hoskisson (2012) described sustainable competitive advantage as the long-term benefits to the organization that cannot be replicated or duplicated by other organizations for the purpose of providing greater value to the customers and for continuing claims to the superiority of their products. Bari et al. (2022) explained that sustainable competitive advantage is the organization's combination of business strategies to achieve its strategic objectives and customer satisfaction locally and globally, and to establish a long-term profit position.

As for the sources of sustainable competitive advantage, a number of researchers (e.g. Barahma et al., 2020) have said that sustainable competitive advantage could be achieved by exploiting the gaps, namely: business system gaps, gaps in positions, regulatory/legal gaps and quality management gaps. Harrison (2004) explained that research on the potential

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sources of sustainable competitiveness has shifted to the importance of an effective and distinct corporate strategy. Thus, the sources of sustainable competitive advantage have become multiple and complex and there is no consensus on the definition of this concept. Many individual interpretations of this concept that have not been agreed to in the related literature still exist.

Farida and Setiawan (2022) identified two main factors that contribute to the achievement of sustainable competitive advantage. Firstly, superior skills that include the distinct capabilities of individuals, which distinguish them from the capabilities of individuals in other competing organizations. Secondly, the company's concrete requirements that allow it to exercise its capabilities. Iruthayasamy (2021) pointed out that companies should combine their resources and skills in the core competencies to achieve sustainable competitive advantage. Soloducho-Pelc and Sulich (2020) believed that the success of companies in achieving a sustainable competitive advantage, regardless of the nature of their business, depends on their ability to combine skills and abilities in a

unique and distinctive way. Barney (1991) explained this by exploring the relationship between the company's resources and sustainable competitive advantage. He stated that all the internal resources of the organization can be used to achieve sustainable competitive advantage if they are characterized by four attributes: scarcity, value, the impossibility of imitation, and the impossibility of finding an alternative.

Amoako (2020) showed a range of sources of sustainable competitive advantage, namely, financial, legal, human, organizational and informational sources. They argued that comparative advantage in resources can be a sustainable competitive advantage in the market if it meets the four conditions set by Barney (1991). Hussain et al. (2020) identified four factors in building sustainable competitive advantage: superior efficiency, superior quality, superior innovation and responding to customer needs, which are considered as the foundations for building and sustaining competitive advantage. It also explains the way to reduce costs and achieve excellence in its entirety. Additionally, any organization can adopt it, whether it is in the industrial or services sector.

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Through the analysis of previous findings and as confirmed by the researchers mentioned above, it is clear that most researchers agree that the sources of sustainable competitive advantage depend on the organization's superior skills and resources, which must be combined to achieve sustainable competitive advantage. According to the researchers, the intangible resources are the most effective among other resources to achieve sustainable advantage because it has a combination of behavioral skills and knowledge that enables them to mobilize resources towards organizational goals. It is also characterized by the four attributes identified by Barney (1991), as mentioned above. This is also confirmed by Barney and Wright (1998) in their study on the role of human resources in the acquisition of competitive advantage. It is further supported by a number of researchers (e.g. Chantabutr & Wanarat, 2024) who explained that the development of superior employees' skills contributes to achieving the sustainable competitive advantage of companies. Further, the four factors identified by Hill and Jones, as mentioned above, could create value

as these factors can explain how and which cost can be reduced, and excellence achieved.

Consequently, the researcher adopted the factors (superior efficiency, superior quality, superior innovation and responding to customer needs) as outlined by Hill et al (2014) in order to measure the dependent variable of this study, which is treated as a one-dimensional variable.

2. Study Methodology

2.1. The Relationship between the Variables of the Study and the Hypotheses

Regarding the relationship between human resource training and development strategy with a sustainable competitive advantage, several studies have confirmed the impact of the human resource management strategies represented in its (human resource training and development strategy) on competitive advantage and sustainable competitive advantage, through Developing the capabilities, skills, and knowledge of the organizations' employees. (Collins & Clark, 2003; Delery & Roumpi,

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2017; Wongsansukcharoen & Thaweepaiboonwong, 2023).

Therefore, this study hypothesized that:

H₁: There is a significant impact of human resource training and development strategy on the sustainable competitive advantage in Yemeni medium-sized Manufacturing industries.

Regarding by literature review related to the relationship between the human resource training and development strategy with strategic agility several studies have confirmed conceptually the effective role for training and development in enhancing strategic agility (Muduli, 2016; Prahalad & Hamel, 1997; Saha et al., 2017). Moreover, Bouaziz & Hachicha (2018) confirmed that human resource management strategies were effective in achieving and improving the strategic agility of the organization.

On the other hand, several studies, including the study of Dabiri and Gholami (2015) , have confirmed a direct relationship between strategic agility, represented by differentiation in innovation and differentiation in the

market and the achievement of competitive advantage through price, quality, reliability, delivery and product innovation. It has been found that the effect of strategic agility in terms of differentiation in innovation is more effective than market differentiation in achieving competitive advantage. Khaw and Teoh (2023) pointed out in their study the impact of business intelligence and the flexibility of the IT infrastructure on competitive advantage, using strategic agility as a mediator variable. Based on the analysis of the study, the results confirm the direct impact of strategic agility on competitive advantage, in addition to the indirect effect of each of the independent variables on the dependent variable, competitive advantage, through the mediator variable, i.e., strategic agility.

Almahamid, Awwad, and McAdams (2010) showed that there is a significant and statistical correlation between strategic agility, knowledge exchange and the competitive advantage, in Jordanian industrial companies. Baškarada and Koronios (2018) proposed five dynamic capabilities: sense, search, and capture, switch and configure, in order to support strategic

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agility in achieving sustainable competitive advantage.

As for the relationship between the variables of the study combined, according to the researcher's best knowledge, no study has dealt with the variables combined. However, according to Baron and Kenny (1986), with regards to the adoption of an intermediate variable, the relationship between the variables of the study could be achieved by using the mediating variable. Additionally, it is necessary to study the impact of the strategy of work-life quality on sustainable competitive advantage by using strategic agility as an intermediate variable in order to get a model that enhances the work of companies in the stringent and complex competitive environment in Yemen.

Therefore, the following hypothesis can be formulated:

H₂: There is a significant mediating effect of strategic agility on the relationship between human resource training and development strategy and the sustainable competitive advantage in Yemeni medium-sized Manufacturing industries.

Building on the theoretical background of the resource-based view (J. Barney, 1991) and the dynamic capabilities theory (Teece et al., 1997), the conceptual framework of this study is constructed as shown in figure 1:

Figure 1 : The conceptual frame work of this study
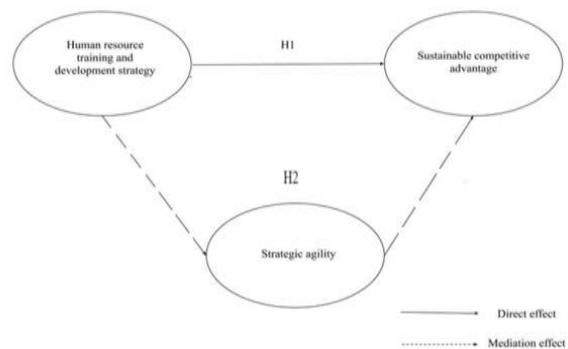
2.2. Method of Study

Due to its ability to simultaneously a set of interrelated relationships between a set of variables, the current study used the structural equation modeling SEM technique to test the relationship between the independent variable, the human resource training and development strategy, the mediator variable, strategic agility, and the dependent variable, sustainable competitive advantage (Ali et al., 2018). Moreover, the study aimed at testing a mediation relationship between the independent variable and the dependent

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thus SEM was considered as the best analytical tool to this study.

Furthermore, the researchers used a number of statistical methods, such as Cronbach's Alpha, to test the stability and consistency of the study parameters; exploratory factor analysis (EFA) to determine the degree of saturation of the items of the measurements; Confirmatory Factor Analysis (CFA) to test the quality of the model's indicators.

2.3. Data Collection

In order to test the hypothesized relationships between the study's variables, a set of primary data was collected through the distribution of survey instrument to the medium sized manufacturing organizations in Yemen. The study's survey was distributed in the Arabic language after translating the original version of the questionnaire. This was the best option to collect the data as the majority of the respondents were not able to speak and read in English.

The targeted population was confined to medium-sized manufacturing companies in the Republic of Yemen.

The total population of this type of companies was found to be 450 companies. The population of the medium sized manufacturing industry was differentiated form the other types according to the number of employees in each company following the guidelines of the Ministry of Commerce and Industry.

The population of the current study consists of medium-sized manufacturing companies in Yemen. The total number of companies in this sector is (450). The sampling criteria to select a representative sample were based on the age of the companies. This criterion was established as a minimum of 20 years or more, following the recommendation of (Annual Report, 2015; World Bank, 2015; Yemeni Ministry of Industry & Trade, 2017). This criterion led to a sample size of (192) medium-sized manufacturing companies. The unit of investigation consisted of the managers and managers from the human resources department in these companies. Following this procedure, a total of (384) surveys were distributed. The number of returned surveys was

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(311), resulting in a response rate of (81%). Out of the (311) surveys, (7) surveys were deemed unsuitable for the analysis process. The final sample size for this study is (304) surveys (Sekaran & Bougie, 2016).

2.4. Variables and Measures

The study's instrument items were selected based on previous researches. The independent variable, human resource training, and development strategy were measured using a scale developed by Delery & Doty , (1996) ; Chen & Huang (2009). The mediator, strategic agility, used a measurement set by Jaworski & Kohli (1993) while the dependent variable, sustainable competitive advantage, used the measurement set by Hill et al.,(2014).

The validity and reliability of the constructed under investigation were measured using Cronbach's Alpha. For the independent variable, human resource training and development strategy, Cronbach's Alpha was .828. As for the mediator variable, strategic agility, the value of Cronbach's Alpha was .745. The Cronbach's Alpha value for the dependent variable, sustainable competitive advantage, was .724, while the coefficient of stability for all variables is .854, which ensured the reliability of the present study's instrument.

2.5. Reliability, Descriptive Statistics, and Correlation Analysis

2.5.1. Exploratory Factor Analysis

Exploratory factor analysis was used to test the validity of the study instrument constructs. The aim of this test is to reach a simple structure for the tested constructs. The simple structure is achieved when each construct item has loaded only on one factor with more than .4 loading score (Hair et al., 2019). As a result, one item was deleted form the human resource training and development strategy variable, six items from strategic agility variable, while four items were deleted from the sustainable competitive advantage construct. Moreover, Kaiser Meyer Olkin (KMO) was conducted and showed a very satisfactory result of .937. Furthermore, Bartlett's test of the correlation quality between items showed a very impressive result of .000 in this study.

2.5.2. Confirmatory Factor Analysis (CFA)

Confirmatory factor analysis utilized to confirm the validity of the study instrument constructs. It is clear in Table

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1 that the measurement model of this study showed no problems with its construct validity as all constructs' items showed very high loading scores of 0.66 or more.

Table 1: Loading, Cronbach's Alpha, CR and AVE

variables	items	Loading	α (> 0.7)	CR (> 0.7)	AVE (> 0.5)
training and development			0.90	0.921	0.566
	STRAIN1	.736			
	STRAIN2	.855			
	STRAIN3	.862			
	STRAIN4	.841			
	STRAIN5	.726			
	STRAIN6	.614			
	STRAIN7	.699			
	STRAIN8	.716			
	STRAIN10	.680			
strategic agility			0.85	0.952	0.668
	AGILITY5	.855			
	AGILITY6	.900			
	AGILITY7	.894			
	AGILITY8	.898			
	AGILITY9	.877			
	AGILITY10	.772			
	AGILITY11	.800			
	AGILITY12	.754			
	AGILITY13	.701			
	AGILITY19	.685			
SCA			0.87	0.934	0.544
	COMPETITIV1	.723			
	COMPETITIV2	.836			
	COMPETITIV3	.825			
	COMPETITIV4	.753			
	COMPETITIV5	.660			
	COMPETITIV6	.708			
	COMPETITIV7	.748			
	COMPETITIV10	.778			
	COMPETITIV11	.710			
	COMPETITIV14	.677			
	COMPETITIV15	.712			
	COMPETITIV16	.702			

Note: α>0.7 = Cronbach alpha (calculated by SPSS tool); AVE= Average Variance Extracted; CR= Composite reliability calculated by Amos.

Confirmatory Factor Analysis show very promising results in its goodness of fit tests as Chi-square result showed (1031.683 , df =423; P < .000) ; CIMIND 2.439; CFI .910; TLI .901; RMSEA .070; GFI .80; AGFI .759; IFI .911 and NFI .858 (Hair et al., 2019).

As shown in Table 1, the average variance extracted (AVE) is higher than the threshold ratio (0.50) which confirms the convergence validity. Moreover, the internal consistency of the variables (CR) also confirmed as the calculated values exceed the recommended value of (0.7). In addition, the correlation between the factors was ranging in within the interval of (0.48 - 0.41), which is lower than the threshold value of (0.85). consequently, we confirmed that the external correlation among the factors is less than the inner bonding value of the same factor (Kline, 2011). Therefore, this confirmed the discriminant validity of all of the study's constructs.

3. Study Results

3.1. Assessing the Model Fit

This study used structural equation modeling (SEM) for the assessment of the model fit. This was accomplished by comparing the model based on multiple fits and choosing the best model, with the help of AMOS (version 20). Under which the goodness of fit indicators showed the following results CIMINDF 2.211; CFI .925; TLI .917; RMSEA

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.067; GFI .819; AGFI 785; IFI .926 and NFI .872. On the basis of these results, it seems that model indicators are the best, where the model has a distinct structure and capacity and contains the best data for the study sample (Hair et al., 2019)

According to the SEM fitted model, supported the proposed study hypotheses, we can see a direct impact of human resource training and development strategy on strategic agility as well as the sustainable competitive advantage. Moreover, the model also revealed an indirect impact of human resource training and development strategy on sustainable competitive advantage through strategic agility see figure 2, and table 2.

3.2. Hypotheses Testing

The main objective of this study is to examine the effects (direct and indirect) that could be found among the study's variables. Thus, all of these relationships which been reflected in the proposed hypotheses were tested by conducting a path analysis using AMOS (version 20).

Table 2 shows that there is a positive relationship between human resource training and development strategy and

sustainable competitive advantage significantly ($\beta=.26$), and there is a positive relationship between human resource training and development and strategic agility ($\beta=.041$). Also, there is a positive relationship between strategic agility and sustainable competitive advantage significantly ($\beta=.37$).

As a result, we can say that hypotheses H_1 can't be rejected. Thus, we can conclude that:

1. There is a direct and positive impact of the human resource training and development strategy and the sustainable competitive advantage in Yemeni Medium-Sized Manufacturing industries.

   In addition to that the following relationships are supported.

2. There is a direct and positive relationship between the human resource training and development strategy and strategic agility identified in dimensions (customer agility, Operational Agility, and Agility partnership) for Yemeni Medium-Sized Manufacturing industries.

3. There is a direct and positive relationship between strategic agility and the sustainable competitive

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advantage of the Yemeni Medium-Sized Manufacturing industries.

Table 2: Path analysis between variables

Variable	Path	Variable	Path	S.E.	C.R.	P value	Result
sustainable competitive advantage	<---	training and development	0.28	0.074	4.259	0.000	Significant
strategic agility	<---	training and development	0.39	0.089	5.795	0.000	Significant
sustainable competitive advantage	<---	strategic agility	0.42	0.058	6.293	0.000	Significant

Note: Estimate= Path coefficient; S.E. = Standard Error (t-value); C.R. = Critical ratio

Figure 2 : SEM model.
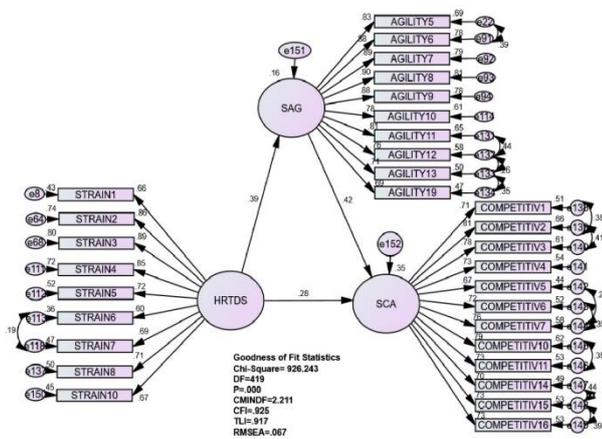
This direct effect of the training and development on both the strategic agility and the sustainable competitive advantage showed satisfactory results as the value of variance explained on the strategic agility was 0.157 (16%) while the variance in the sustainable competitive advantage was 0.351 (35%). According to Cohen, (2013), the value of ($0.26 > R^2 > 0.13$) is described as medium and acceptable.

3.3. Mediation Effect

Based on table (3), we found a significant direct relationship between human resource training and development strategy and sustainable competitive advantage. This significant impact has a coefficient value of 0.44.

Table 3: Direct effect human resource training and development strategy on sustainable competitive advantage without mediated

Variable			Direct Effect	Indirect effect	Total	P	Result
sustainable competitive advantage	<-	human resource training and development strategy	0.44	0	0.44	.000	Significant

Furthermore, table 4 showed a direct impact of human resource training and development strategy on strategic agility, with the coefficient value 0.41, As well as a direct impact of strategic agility on sustainable competitive advantage, with the coefficient value of 0.36. After the integration of the mediator variable in the model, the coefficient value of the human resource training and development strategy on sustainable competitive advantage decreased from 0.44 to 0.26. Moreover, the indirect effect found to be significant with a coefficient of .15 .The indirect impact is considered large as stated by Preacher and Kelley (2011).

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Moreover, the validity of the indirect relationship of the fourth main hypothesis was explained using Bias - corrected percentile method, for value Upper (BC) and Lower (BC), which was respectively (0.26 - 0.096). this is considered a good range. Furthermore, we tested whether the indirect effect is partial or total by the value of the total effect that is shown in Table 5, which indicates the sum of the direct effects. This result showed a value of (0.416). This score is laid between 20% and 80%, which indicates that strategic agility is playing a partial mediating role (Hair et al., 2019).

Table 4: The effect of mediation variable (direct and indirect)

Variable	Path	Variable	Direct Effect	Indirect effect	Total	P	Result
strategic agility	<--	human resource training and development strategy	0.41	-	0.41	.000	Significant
sustainable competitive advantage	<--	strategic agility	0.37	-	0.37	.000	Significant
sustainable competitive advantage	<--	human resource training and development strategy	0.26	0.151	0.416	.000	Significant

Table 5: Mediation effect test.

	p-value	T-statistic CR	Indirect relationship test		Bias-corrected percentile method		Standardized coefficient			Result
			(Bootstrap) (TWO Tailed Significance) (BC)	Sobel Test	LOWER (BC)	UPPER (BC)	Direct	Indirect	Total effect	
Indirect relationship between HDT strategy and the CA in the existence of strategic agility	.000	3.882	.001	0.000	0.096	0.261	0.26*	0.151**	0.411**	Partial mediation
Significance: * $p < 0.05$. ** $p < 0.01$										

Thus, we can conclude that strategic agility is a partial mediator. Consequently, we can conclude that that hypothesis four H_2 could not be rejected and that human resource training and development strategy has an indirect effect on sustainable competitive advantage through strategic agility variable.

4. Discussion and Conclusion

We analyzed the relationship between human development and training strategy on the sustainable competitive advantage given a sample of Medium-Sized manufacturing companies operating in Yemen. Moreover, we tested the mediation effect of strategic agility on the relationship between human development and training strategy and the competitive advantage. Based on the results obtained, the main conclusion is that there was an indirect and positive effect of the human resource training and development strategy on sustainable competitive advantage through the partial mediation of the strategic agility variable. This, in turn, supported the main purpose underlying this study. The mediator variable, strategic agility, explains the causal effect of the human resource training and development strategy on

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the sustainable competitive advantage which contributed to a more understanding to the nature of the relationship between human development and training and the sustainable competitive advantage.

Thus, it is possible to say that the theoretical model proposed by the researcher fitted to the data collected from the target population. These results contributed to the theoretical perspective of the strategic agility and its role as mediator in explaining the relationship between the human resource training and development strategy and sustainable competitive advantage.

The current study contributed to the empirical evidence and enriched the theories of human resource management and strategic management. Based on i.e., The RBV theory by Barney (1991) and the theory of dynamic capacity by Teece, Pisano, and Shuen, (1997). The results of this study concurred with the findings of other studies and removed a lot of ambiguity about the intermediate effect of strategic agility in explaining the indirect effect on the relationship between the human resource training and development strategy and sustainable competitive advantage in

Yemeni manufacturing industries. The proposed structural model of this study emphasized on the positive impact of the human resource training and development strategy in enhancing the motivation of the employees, raising their abilities, skills, and knowledge and ensuring their safety during work. As a result, this would strengthen their loyalty and the sense of belonging and it would ensure a smooth production process. This, in turn, enhances the ability of companies to meet the customers' dynamics needs by formulating strategic directions that are aligned with the external work environment of the organization. Additionally, it explains how to reconfigure the operational processes in a proactive way.

Implications.

5. Theoretical and Practical Implications

This study contributed to the theoretical theme in literature based on the resource-based theory. (Barney, 1991), and the dynamic capabilities theory (Phuen, Teece & Pisano, 1997). This study confirmed empirically the finding of these two theories and clarified more in-depth the indirect effect for the human resource training and

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development strategy on the (sustainable competitive advantage using strategic agility as a mediator variable. The finding of this study emphasized on the role of strategic agility as a mediator in explaining the causal effect the human resource training and development strategy on the sustainable competitive advantage in Medium-Sized Yemeni manufacturing Industry companies. Worth mentioning that no other study has examined the indirect effect of human resource training and development strategy in enhancing sustainable competitive advantage with strategic agility as a mediator.

As this study confirmed the existence of a role for the mediating variable of strategic agility in explaining the relationship of the human resource training and development strategy on the sustainable competitive advantage the Medium-Sized Yemeni manufacturing Industry. A direct implication would be the achievement of a sustainable competitive advantage through developing more strategic agility. Moreover, companies should consider strategic agility as a tool for anticipating and managing change, embracing their risk to create more

opportunities, and increasing the readiness to their direct competition. Despite the importance of the human resource training and development strategy in achieving the sustainable competitive advantage in the Medium-Sized manufacturing companies operating in Yemen, it won't give the best, it is combined with strategic agility.

6. Future Research

There are several paths for future research. Future research can test the mediation role of the strategic agility in different sectors such as retailing or service sectors. The mediation role of strategic agility also can be tested over longer time period using longitudinal data. This would offer a more insightful overview of the mediation role. I addition, future research can also test the mediation role of the strategic agility and its subdimension. The subdimension can show which one of these subdimensions can be the most important one.

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